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THE

British Bee Journal

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THE NEW YEAR.

The beginning of the year and the commencement of a new volume give us the opportunity of wishing all our readers a Happy New Year, and it enables us to thank our many friends who have favoured us with their patronage and assistance. It also allows us to acknowledge the numerous testimonials we are constantly receiving of appreciation and approval of the JOURNAL, as well as testimony as to its usefulness. With this number we begin Volume XXXVIII., and we have every cause for satisfaction with the progress made, and that, notwithstanding a bad season, the JOURNAL has steadily extended its circulation. A comparison with the first volume shows that whereas this contained 200 pages, the last has increased to over 500; and although so much larger, the cost has been decreased. It is the only weekly bee-journal in the world, and also the only one that keeps its readers informed of the progress made throughout the world in regard to both the science and practice of bee-keeping. All the leading British bee-keepers are contributors to our columns. Nor is the circulation restricted to Britain, for the JOURNAL goes into every part of the world, and contributions of the leading men of other countries are found in its pages. Hardly a week passes but we receive numerous appreciative letters, and we could only publish them by occupying space which is more usefully employed in giving information of service to bee-keepers. The writers of these will therefore excuse us if their letters do not appear in print, and receive the assurance that we are grateful to them all the same. Although appearing weekly, this has at times scarcely permitted us to keep abreast with the many contributions which have been forwarded to us, and we fear we have trespassed on the patience of our friends by the postponement of the appearance of their letters. The extent and variety of our work will be gleaned from a perusal of the index of the last volume, and this work we hope to continue during the coming year. As an instance of the extent to which our advice is sought we may say that upwards of 900 queries on matters connected with bee-keeping were replied to during last year. We hope we may be favoured by a continuance of the assistance hitherto given to us, so that the JOURNAL may retain the position it now occupies. No expense will be spared to make it the most useful of its kind, and we ask our readers to use their best endeavours to further increase its circulation.

A RETROSPECT.

The year 1909 will be remembered by bee-keepers as having been remarkable for the amount of honey-dew prevalent all over the country, and in this respect it has been one of the worst they have ever experienced. Out of over 300 samples of honey sent us for examination 75 per cent. were spoilt by honey-dew. Although the season opened with good prospects, it subsequently became a complete failure owing to adverse weather conditions, and the hopes of bee-keepers, which for a short time were bright, were not realised. In this climate we seldom have excessive sunshine, but last year the summer was confined to the first fortnight in August. During this short period the temperature exceeded 80 deg. on four days, and on the warmest of them reached 86 deg. with bright sunshine; but afterwards we had a succession of damp weather and dull days, so that in many cases bees were not able to store sufficient for their winter supply, and the bee-keeper, besides being deprived of his expected harvest, has been obliged to invest largely to provide the necessary food to enable the bees to tide over the winter in safety.

BRITISH BEE-KEEPERS' ASSOCIATION.

The past year has been one of anxiety for the B.B.K.A. The Association has now been in existence for thirty-six years, and during that time has adhered firmly to the object for which it was instituted, viz., to uphold the industry of bee-keeping, and to instruct the agricultural and labouring classes of Great Britain in the most humane and profitable methods of bee-keeping. This it has done by the establishment of county associations affiliated to it in every county where the inhabitants were disposed to take sufficient interest in the pursuit. The task was arduous, but the Association has steadfastly kept to the work assigned to it, and it has reason for congratulation on the success that has resulted. With time the educational work of the Association has increased, but the income has not done so, and is now quite inadequate to its requirements. It is felt that some

measure of reform is necessary in order to bring the county associations into closer relationship with the central Association, and this has been considered by the Council and a scheme formulated with that object in view. County representatives discussed the matter at a Council meeting on December 16 last, and the question will be further considered at an adjourned meeting to be held in May next, when it is hoped every association will be properly represented, and such measures decided upon as will put the Association on a firm basis and enable it properly to fulfil its function. In order that the industry may occupy its proper place in our land there must be cohesion among the associations, with an influential central governing body at the head of all. No industry can prosper without a strong central association, and bee-keeping is no exception, so that the sooner bee-keepers realise this and act upon it the better will it be for the industry. The work of the Association is not yet achieved. There is still a great deal before the central and the affiliated associations. Let both be mutually assistant and forbearing, and the work, however difficult, will, we are assured, be satisfactorily accomplished. Unfortunately, the Association has been hampered by the illness of its secretary, Mr. E. H. Young, who has been obliged to resign his position, and Mr. W. Herrod, who has been for a long time chief expert of the Association, has been appointed secretary *pro tem.*, an appointment which has given general satisfaction. With a new secretary and a strong Council there is every reason to expect a bright future of usefulness for the Association.

CONVERSAZIONES.

During the year two Conversaziones were held by the B.B.K.A., at which papers were read and discussions followed, those at the spring meeting being on "Feeding Bees," by Mr. F. W. L. Sladen; "Working for Increase," by Mr. T. Bevan; and the "Production of Comb Honey," by Mr. W. Herrod. At the autumn meeting the subjects for discussion, introduced by the Chairman, were on "Beneficial Results from the Fertilisation of Fruit-Blossoms by Bees" and "Some Recent Investigations in connection with Diseases of Bees." This was probably the largest meeting ever held by a bee-keepers' association, and showed that the bee-keeping industry was not on the decline, and that bee-keepers were quite as enthusiastic as they used to be.

A ROLL CALL.

Each year our industry is deprived of some of its best representatives, and occasionally, when a great worker passes away, we wonder whether the gap will be adequately filled. The names of some who have gone from us during the past year are not ephemeral, and will find a permanent place in the history of bee-keeping. Happily, we do not lack new blood, but such men as Mr. W. H. Harris and Mr. W. Broughton Carr are hard to replace. Besides these, we have lost the Rev. E. Davenport, one of the first to pass his examination, in 1881; Mr. G. Wells, who originated working with two queens in a hive; and Mr. Wren. Abroad the most notable losses are those of Mr. E. L. Pratt and M. Zwilling.

LITERATURE.

The principal additions to the literature of bee-keeping during the year have been "The Children's Story of the Bee," by S. L. Bensusan, and "A Year's Work in an Out-Apiary," by G. M. Doolittle; whilst "Mendel's Principles of Heredity," by Professor W. Bateson, is a most important work, which summarises the present state of our knowledge on this important subject. Of articles in the B.B.J. we would mention as some of the most important those on "The Discovery of the Origin of Beeswax," by Colonel H. J. O. Walker; "Heather Honey Secretion," by "Medicus"; while the subject of Parthenogenesis has again been thoroughly discussed, and the contention of Dr. Kuckuck that "There is No Parthenogenesis" has been shown to be without foundation. Much space has also been devoted to "Bee-Stings and Rheumatism," and an important article appeared in our pages from the pen of Dr. Terc, the originator of the treatment, to whose perseverance is due the fact that the remedy is now coming into general use, although his name is frequently forgotten in connection with it. Mr. F. W. L. Sladen has also contributed a series of articles on "Breeding the British Golden Bee in Ripple Court Apiary," in which he shows how mating is controlled, and the systematic work that is being done by him for the improvement of bees suitable to this country.

DISEASES.

Important progress has been made in the investigation of bee-diseases, and we have had Dr. Malden's report respecting the disease which caused such mortality amongst bees in the Isle of Wight, and although he suggests no remedy, it is to be hoped one may shortly be found, especially as the disease seems to have spread to the mainland and has appeared in several counties. It is curious to notice that a similar mortality among bees has been prevalent not only on the continent of Europe, but also in America

and Australia. With respect to foul brood, Dr. Maassen's further researches have confirmed his previous findings, as well as those of Dr. Burri, which show that, so far as Europe is concerned, there are two forms of the disease, produced by different bacilli. Dr. Zander has also fully corroborated these findings. We would like in this connection to mention that our American friends have maintained that black brood—a disease quite new in this country—was European foul brood, and that *Bacillus alvei* was present in it; now we have it from Dr. Phillips, who promulgated this statement, that "the cause of European foul brood is not known." Fortunately, black brood is not very prevalent in this country, and no doubt if it becomes as destructive a pest as foul brood, it will receive the same attention as that disease has had. Dr. Zander's investigations have also thrown new light on dysentery, which will doubtless be of great use to bee-keepers in future. While we have done nothing in this country in the way of legislation against disease, one country after another is passing Acts for the protection of the industry, the latest being legislation in Cape Colony and the Transvaal.

NOVELTIES.

There have been few novelties produced during the past season, the chief being Simmins's multiple uncapping knife, the "Carver" section-glazing machine, Wilkes's "Free-way" excluder, "Seadon" hive, Watts's queen-cage, Nuttall's queen-excluder and bee-escape, and Gray's wax-capping melter. Most of these were exhibited at the Conversaziones of the B.B.K.A., and criticised by those present.

OURSELVES.

We intend to continue the short biographies, with portraits, of prominent bee-keepers who have taken so important a part in raising bee-keeping to the position it occupies at the present time. It has also been suggested that as there are so many new bee-keepers some of the articles in the earlier volumes of the B.B.J. should be reprinted. We have so much that is new to record that there is little room for reprints, but we will try to make a suitable selection as far as space will permit. We are also hoping to make arrangements by which our staff will be strengthened, which we hope will be of benefit to our readers and have their approval.

We have taken a cursory glance at some of the events of the past year, and we trust that all bee-keepers, forgetting the things which are behind, will press forward to those which are before, and strive, with renewed zeal and increased energy, to redeem the past, so that their labours may be crowned with a great and abundant measure of success during the present year.

BRITISH BEE-KEEPERS' ASSOCIATION

The following is the report discussed at the meeting on December 16 last, and which, in accordance with a resolution passed at that meeting, is to be brought on for consideration at the council of representatives in May next.

REPORT OF THE SPECIAL COMMITTEE

of the council of the British B.K. Association appointed on October 7, 1909, "to consider generally the present position of the B.B.K.A. and to report what measures should be taken to improve the same." Received by the council on November 18, 1909, and referred to the meeting of the council to be held on December 16, 1909, for consideration:—

The special committee have held several meetings and have considered, in all its bearings, the matter referred to them.

In the opinion of the committee it is desirable, for the general advancement of apiculture in its various aspects throughout Great Britain, to establish complete identity of interests between the B.B.K.A. and the affiliated county associations, and to secure more efficient organisation (*a*) for the assistance of individual bee-keepers on the general lines followed by the county associations, and (*b*) for the representation of the collective interests of the county associations.

The committee believe that these objects can be best attained by the present B.B.K.A. and the county associations becoming parts of one united association, embracing the whole of Great Britain.

With this view, the committee unanimously recommend for adoption by the council and the county associations the undermentioned scheme of reorganisation. They suggest that if the council approve the scheme in principle a special meeting of the council should be convened for its consideration: that every member of the council, and particularly the representatives of the county associations on the council, should be asked to make a special effort to attend; and that printed copies of this report should be circulated among the members of the council of the B.B.K.A. and the members of the councils and committees of the county associations, so as to enable full consideration to be given to the scheme by all parties before the date of such meeting.

The adoption of this scheme, however, can be regarded only as the first step towards the attainment of the objects in view. The proposed reorganisation will only create the machinery to enable the

necessary steps to be taken for the improvement of the position. It will be for the new council, working hand in hand with the county associations (or branches of the B.B.K.A., as it is proposed to call them), to legislate for the best development of apiculture and for the welfare of bee-keepers. In order to indicate some of the important questions which should engage the attention of the new association, the committee append a few supplementary recommendations, which, however, cannot be acted on until the proposed scheme of reorganisation has been adopted.

SCHEME ABOVE REFERRED TO.

1.—(*a*) The present members of the B.B.K.A. shall be formed into a central branch, and the present council of the B.B.K.A. shall be the first council of the central branch. Any bee-keeper residing in a county in which there is no affiliated association, or any bee-keeper not wishing to join an affiliated association, shall be eligible to join the central branch.

(*b*) The present county associations shall become branches of the B.B.K.A., and shall adopt the title of B.B.K.A. with the county name of the branch affixed.

2.—A general council of the B.B.K.A. shall be constituted as follows:—Every branch of the B.B.K.A. having not more than 200 members shall appoint one representative on the council, and every branch having more than 200 members shall have one representative on the council in respect of every 200 members. The general council shall have power to co-opt 15 additional members of council from among the general body of members of the B.B.K.A.* The members of the council appointed by the branches shall retire annually, but shall be eligible for re-election. One-third of the co-opted members of the council shall also retire annually. A retiring member shall be eligible for re-election, provided he has attended at least one meeting of the council during the year immediately preceding his retirement.

3.—The central branch shall pay over to the other respective branches the annual subscriptions received from members resident within the areas of such branches. The central branch shall contribute to the funds of the general council £1 1s. per annum and 5 per cent. of the annual subscriptions not handed over to other branches. The central branch shall retain, undiminished, any subscriptions or donations received from whatever source for special purposes.

4.—Each branch shall contribute to the funds of the general council:—

(*a*) A fixed sum of £1 1s. per annum, and

(*b*) A sum equal to 5 per cent. of the total annual subscriptions received from members and from the central branch, other than contributions received from county councils, or from members or others for special purposes. But such 5 per cent. contribution shall not be payable until an increase in the income from annual subscriptions, as compared with the year 1909, shall enable the branch to pay such contribution, or part thereof.

5.—The general council shall appoint local hon. secretaries in counties where there are no branches, and shall take all other steps in their power, with a view to branches being formed in such counties.

6.—The B.B.K.A. shall, in addition to a general council as herein before provided, elect a president, one or more vice-presidents, an hon. solicitor, an hon. treasurer, and an hon. auditor, all of whom, except the auditor, shall be *ex officio* members of the general council. The president, the hon. solicitor, treasurer, and auditor shall be elected annually by the members in general meeting. The general council shall have power to appoint an expert analyst and one or more hon. or salaried secretaries.

7.—The general council shall hold a meeting at least once every three months, at such place in London or elsewhere in Great Britain as the council may from time to time decide. The quorum necessary for the transaction of business shall be five members.

8.—The general council shall have power to delegate any of their powers to committees consisting of such member or members of their body as they may think fit.

9.—The annual general meeting of the members of the B.B.K.A. shall be held at such time and place as the general council may appoint. Not less than fourteen days', nor more than twenty-one days', notice shall be given of such meeting. Such notice shall be accompanied by a report and a statement of accounts for the preceding year, and by the agenda of the business to be done at such meeting.*

10.—A guarantee fund shall be formed of not less than £300, to secure that the income of the general council, in respect of contributions from the branches, shall be not less than an average of £100 per annum for the first three years after the constitution of the general council.

SUPPLEMENTARY RECOMMENDATIONS,

conditional on the adoption (with agreed modifications, if any) of the above scheme.

That it be an instruction to the general council to give their consideration to the following among other matters:—

(*a*) The definition of the spheres and

* This will make, including the co-opted members, about 55 members of council.

* *See* Supplementary Recommendation (*e*).

duties of the general council and the branches respectively.

(*b*) The enactment of rules and regulations of the B.B.K.A. and of standard rules for the branches.

(*c*) The questions of classifying the subscribers to the branches, and of graduating the amounts of their annual subscriptions, according to associates, members, fellows, or otherwise, and of making such or other classification (if any) and graduation (if any) uniform throughout all the branches, also of the adoption by all the branches of a standard form of application for membership, also of the expediency of conferring on a subscriber to one branch some limited privileges in regard to all other branches.

(*d*) The conditions under which the general council should be empowered to offer hon. membership of the B.B.K.A. (including all branches) to distinguished bee-keepers.

(*e*) The practicability and advisability of holding the annual general meeting of the B.B.K.A. in a different county each year.

(*f*) The conditions under which the general council, in conjunction with the branches, should hold examinations, and the terms and conditions on which the general council should grant certificates of proficiency in bee-keeping.

(*g*) The question whether, and, if so, what, steps should be taken to provide for a monthly or other periodic publication of the proceedings of the general council and branches for the general information of the members of the B.B.K.A.

(*h*) The expediency (funds permitting) of paying the travelling expenses of members of the general council in attending meetings of the council.

(*i*) The advisability of restricting the privileges of the B.B.K.A. insurance scheme to members of the association.

(*j*) Generally, the best means to be adopted for advancing apiculture in Great Britain, and increasing the membership and revenues of the branches.

W. F. Reid, *Chairman.*
C. L. M. Eales.
E. Garcke.
J. B. Lamb.
A. Richards.
E. D. Till.
E. Walker.

November 10, 1909.

W. B. CARR MEMORIAL FUND.

Since the above fund was closed we have received from W. B. Booth 5s. and from G. Chandler 2s. 6d., making the total amount £63 7s. 6d.

AMONG THE BEES.

BY D. M. M., BANFF.

"BEES HAVE PORTIONS OF ETHEREAL THOUGHT."

Bees possess the important gift of energy in a large measure, but frequently we find them failing woefully to respond to some call on this trait, which is mainly a question of will-power. They at times turn lazy. Can a keeper energise his bees? Can he act in such a way as will give them motive power? At a school picnic recently a juvenile team at a tug-of-war allowed themselves to be pulled by the other side with scarcely an effort to resist. At the second pull they were roused to action by some scoffing remarks, by the shouts of spectators, and by encouragement from their teacher, and they exerted their full powers, winning easily. One little fellow at high leap seemed to put his whole heart and soul into each effort. Near the final he even spat on his hands and gripped his fists with close tension, exerting his full energy, with the result that he cleared inches above boys years older than himself. Sheer will-power did it. Now (although the analogy is, perhaps, imperfect), bees possess this vim in no small measure, and can be made to respond to some *stimulating influence.* A Texas bee-keeper wrote lately: Kick a hive troubled by robbers, and you convey energy to the attacked force which enables them to defend their citadel. Another American says: Shake bees up from their lethargy and you give them a new lease of active life. One bee-keeper advises: Extract frequently, and you give bees a distinct incentive to work to refill their empty combs. Another maintains that you can rouse them by shifting, perhaps to a new hive or a new locality, when you work some magic change, imparting a desire on the part of the bees to be up and doing. We all know bees, after a trek, labour with the utmost assiduity until they have founded their new city and built its houses, streets, and walls.

The subject is a fascinating one, so I should like to follow it out further. Give a bee a motive and you call up its latent energy. A dead drone somehow got into a unicomb observatory-hive at a show. A bee—I really think the same bee—made countless, but fruitless, efforts to dislodge and evict the dead body. What energy it displayed, keeping it up for hours! I hung some threads from the top bar of a frame. The bees, quiescent during my examination of the interior, were roused to action by this desecration of their

hearth and home, and a few made almost frantic efforts to eject this foreign matter, and never rested until their self-imposed task was accomplished. A breakdown from faulty foundation was carried to a strong stock, which apparently were leading a semi-somnolent existence, as the weather at the time was inclement. A certain number of workers were detailed off to repair the shaky comb, which I had taped in, and in an hour they had not only buttressed the unstable fabric, but also cleared off the now unnecessary tapes by nibbling each at one point, and ultimately dislodging them.

Now, I claim that in all the three cases new energy was imparted to these bees, and I think what was done on a small scale here might be done in many cases on a large scale. Might I also, without being sat upon by somebody, claim that not only instinct, but reasoning powers guided these bees when they righted what was wrong?

I am as ready as anyone to admire the wonderful instinct which guides the bees in the construction of their exquisite comb, and which enables them to carry out successfully the wonderfully prescient proceedings before swarming, and I highly appreciate the almost intellectual after-procedure. These are, let us say, the results of the inborn instincts implanted in the bees. But many features of the internal economy of the hive are out of the beaten track, and require plans and operations such as never before came under the cognisance of bees—instances where mere instinct would be at fault. The whole commonwealth assembles in solemn conclave and discusses every point in this new and undreamt-of marvel of the hive. Opinions must be enunciated as to the best mode of procedure; perhaps many and diverse plans may be suggested, but, somehow, with a unanimity that is marvellous, the 60,000 inhabitants, or such a force as is necessary, proceed to business, and carry out what I have no doubt has been the final finding of every bee in the community. This appears to me to be a step in advance of mere instinct. "Ethereal thought" has materialised by the reasoning powers of the whole bee-nation coming to the conclusion that such-and-such must be done.

The point I wish to bring out is that instinct teaches every bee to carry out what is the regular work of every hive, but that at times circumstances may, and do, arise which evolve problems mere instinct was never meant to solve. We cannot reasonably suppose insects gifted with instincts adapted for occasions that are never likely to happen.

The famous Huber observed that his bees deviated from their original plan of comb-building when they discovered that it would come in contact with glass, and they adopted the variation before necessity would compel them to use this unsuitable surface. From this he deduces that they added reason to instinct to guide them.

In Kirby and Spence's work on "Entomology" the latter insists that "although instinct is the chief guide of insects, they are endowed also with no inconsiderable portion of *reason*," and he supplies several authorities to prove that it may play a part in producing certain actions performed by bees at times.

Most modern philosophers — take Büchner's "Mind in Animals" as a specimen—allow that it would be unreasonable to deny some share of reason to the larger animals; and if to them, why not to insects with so high a degree of intelligence as ants and bees?

Most undoubtedly bees can communicate intelligence from outside sources, and the bees in the hive can receive this information. Every bee-keeper knows this to be a fact, and can supply corroborative evidence on this head. Granting them the other gift will not add much to the already marvellous "intellectual" powers possessed by the hive-bee.

In this the first contribution to a new volume it may be appropriate to wish all readers a happy New Year. May the season about to dawn be one of the most prosperous on record is my fervent wish to the bee-keeping fraternity.

EAST AFRICAN BEE-HIVES.

Mrs. E. A. Birch, whose "Interesting Extracts" are a pleasant feature of our monthly *Bee-keepers' Record*, sends us the accompanying photograph illustrating the curious hives used by natives in the East African Protectorate. A letter written to Mrs. Birch by one of the Government officials there says:

"In looking through my old negatives, I came across the one of the honey-drum that I was looking for some time ago. I now enclose a print for you. This one is hanging in an acacia tree. Note the type of foliage, naturally adapted for protection against drought and hot winds. The leaves are small and pointed—almost 'spines.' This reduces the surface from which evaporation can take place. Then the whole of the foliage is arranged, and the leaves themselves lie, edgeways on to the wind, very cunning.

"A cyclist riding round Lake Naivasha —altitude about 6,000 ft., more or less —was attacked by a swarm. He left his machine and bolted, waving his hat—an operation which provided the bees with

an opportunity for stinging his head, which they took.

"Cases of caravans being scattered by bees are common in almost all parts of the country, except far to the north, where desert conditions prevail.

"The Wakikuya have told me that twenty stings at once may prove fatal. This is, however, not the case, I should imagine.

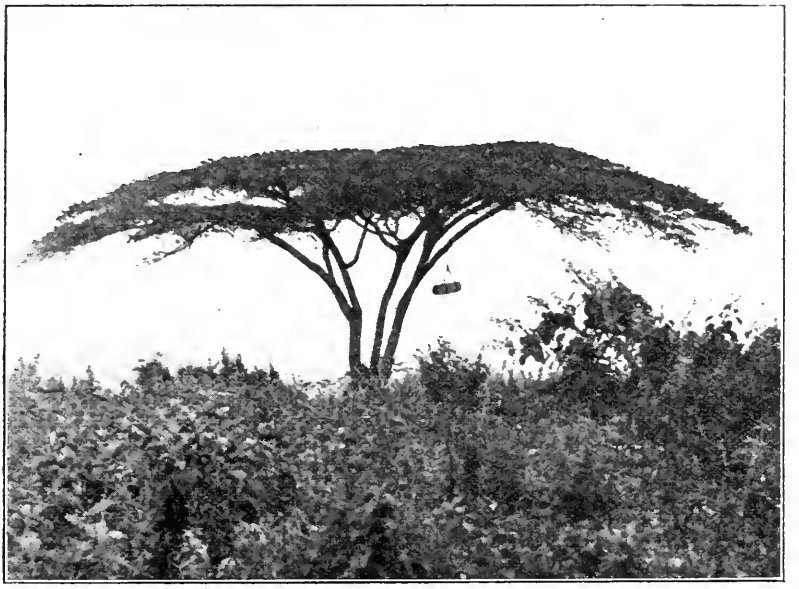
"Before British occupation, an owner of honey-drums finding a stranger tampering with them in the trees where they hung might kill him.

"In the Tana Valley a very large black bee is met with.

"It is customary for householders (European) to boil native honey thrice, and skim off the impurities that rise to the surface."

D. E. Hutchins, in his "Report on the Forests of British East Africa," gives an interesting description of the bee-hives used there:

"Bees (*Apis mellifera* var. *Adamsoni*) represent a considerable source of forest wealth. At present the honey is eaten, and forms a dearly-loved article of food; the wax is usually thrown away. Bees are so abundant in the forest that it seems likely that beeswax, in the future, will become an important source of forest revenue. There are regions in equatorial Africa where milk and honey form the chief diet of the natives. All through the Kikuyu country bee-hives are common. The natives take three or four feet of a soft-wooded tree, hollow it out, and then fit a piece of split board at each end. These hives are very common. Sometimes two or three will be seen in one large tree, and tied as high as 50 ft. or more from the ground. The bees are not put into these hives, but they go in of themselves. These hives are of exactly similar appearance. When a swarm leaves one of these hives and finds another of exactly similar appearance, it naturally makes its home there. This system of bee-keeping saves a great deal of trouble, and the yield of honey from these hives is large. Practically all the bees of the country live in this state of semi-domestication."



EAST AFRICAN HONEY-DRUM HANGING FROM AN ACACIA TREE.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL BROOD LEGISLATION.

[7711.] Now that the scheme of reconstruction for the B.B.K.A. has been referred to the county associations, it might be well to have it thoroughly discussed in the pages of the B.B.J. There will be plenty of time for this, as the next

meeting to consider it does not take place till May. Why this is so I do not know, but five months seems a ridiculously long time to take for the consideration of this scheme, which evidently received hardly any support at the last meeting on the 16th ult.

There is, however, another question which I need make no apology for again bringing up at the present time. I refer to foul brood legislation. It is quite evident that the great majority of bee-keepers are not content that no active steps are being taken ultimately to secure compulsory powers to deal with foul brood, and it is certain that the Council of the B.B.K.A. will shortly be asked to again move in the matter. Whichever political party is returned to power will probably not make a deal of difference as regards the passage of such a Bill through Parliament, but the present is the time for securing promises of support from would-be M.P.s. In Cumberland all candidates will be asked, within the next few days, to state their attitude towards such a measure, and their replies, if possible, will be published in the local papers. If this were done in every county, M.P.s on both sides of the House would have their attention directed to the question, and would be ready to consider it when the Bill came up. Might I suggest that the B.B.K.A. also give their support to some such movement, which I am sure would be entered into with zest by the present secretary? County and district secretaries might also give notice of any promises of support given by candidates to the secretary of the B.B.K.A. As the elections will be over by the end of January no time should be lost, and candidates should be approached at once. I have no fear but that a Bill of this kind will ultimately be passed, how soon entirely depends on the exertions of bee-keepers themselves.—G. W. Avery, Hon. Secretary Cumberland B.K.A., Heads Nook, Carlisle.

EARLY BROOD-REARING.

[7712.] I think the following experience may interest some of the readers of the Journal. On December 22 last I was at my brother's, in Waresley, Huntingdonshire, who has several stocks of bees. He was told in the spring that he had foul brood in one of them, so he was very anxious for me to have a look at the hive. About mid-day, when the sun was shining and it was very mild indeed, the bees flying as in April, I opened the suspicious hive and found no signs of foul brood, but instead a patch of new brood four to five inches in diameter, with sealed cells, larvæ, and eggs, and to all appearances the queen was laying quite freely. Don't you think this very rare for December? [It is early breeding, but occurs frequently.—Ed.]

I uncovered several other hives and found plenty of stores, and to all appearances the colonies were in the same condition as the one I first examined. At the same time I was having letters from my home (Grimsby) saying they were snowed up, and there were severe frosts on Sunday and Monday. We did not have any snow here, only a little sharp clean frost. The distance from Grimsby to Waresley is about 110 miles.—David Seamer, Expert to the Lines. B.K.A.

THE B.B.K.A. OF THE FUTURE.

[7713.] From the account of the Nov. meeting of the council of the B.B.K.A. (page 461), as well as from letters that have lately appeared in the B.B.J., readers must conclude that the B.B.K.A. has fallen upon troublous times.

To myself it appears that "the hour and the man" have arrived, and that the future success or failure of the B.B.K.A. is in the balance.

If the future is to be one of golden opportunities and real helpfulness, the Association must do something more than it has done in the past to justify its existence, and must begin at once to open out into newer and more productive fields of usefulness. If the council still mean to cling to the old paths, or "run the show" by one or two of its members, they may as well shut up their new offices at 11, Chandos Street at once. It is idle for them to sit down and say they can do nothing for lack of funds. The way to get the funds *must* be found, and it is incredible that there are so many thousands of interested bee-keepers in this country who cannot be got at. Not until we get a really representative council, each member of which is personally known to his electorate, and some tangible benefits from membership of the association, will the funds of the B.B.K.A. increase and multiply. When the writer sees the first faint hope of these becoming realised, he, with, no doubt, many others who have in former years paid their subscriptions, entrance fees to expert examinations, &c., and then dropped away from the "old ship" through deriving no benefit, will once more re-embark and sail away under the old flag (B.B.K.A.), with its captain of old, but with a new pilot, in hopes of making more profitable voyages than on former occasions.

As your columns appear to be opened to the free expression of opinions, and as I have at times made use of them in the past, I should very much like to give my views as to the way (1) the funds might be put on a substantial footing;

and (2) the council might be made up of members really representative and personally specially qualified for the office.

1. *The Funds.*—The present fee of 5s. and county affiliation fee should be done away with altogether. The funds must come from each individual member of a local association, through its hon. secretary. There should be several associations in each county throughout England, Scotland, and Wales. County associations may still be allowed to exist simply to promote the county show, and receive a small fee from each member of the local associations in the county through the honorary secretaries for secretarial expenses. All county council and departmental grants should go direct to the B.B.K.A., who should yearly present proper balance-sheets to each county, showing clearly how their grants had been used for the benefit of apiculture in their own county.

Expert examination fees should be considerably increased; say, third class, one guinea; second class, two guineas; first class, three guineas, or even five guineas (inter-B.A.fee). The B.B.K.A. apiary ought to show a substantial profit, or, for the sake of the prestige of the B.B.K.A. and its expert, it should be given up. A balance on the wrong side is neither educative nor inspiring to would-be bee-keepers.

The fee for membership might be made up as follows: B.B.K.A., 2s. 6d.; local association, 3d.; county association, 3d.; total, 3s. An average of only 100 members to each county in England and Wales alone (5,200) will bring in an income of £650 yearly to the B.B.K.A. Double that number, £1,300. Scotland's thirty-three counties, 3,300; or another £412 10s. The B.B.K.A. library, of which we have heard, but with which I have failed, after many attempts, to get into touch, ought to be made to add its share to the funds.

The B.B.K.A. should have a newspaper or periodical of its own if arrangements could not be made with the B.B.J. to become the official organ of the B.B.K.A.

2. *The Council.*—The country should be divided into nine districts—England, four; Scotland, three; Wales, two. Each district to elect two members (lady or gentleman). Thus England would have eight, Scotland six, and Wales four members. The chairman to vacate the chair each year, and the vice-chairman to take his place. Each member of the council to be a first- or second-class certificated expert. Travelling expenses to and from the meetings to be paid. Editor of B.B.J. to be an ex-officio member of the council. The members of the council should be the judges at the county shows of their own district, and should act as superintendent experts for it. Meetings of council to be held monthly in each district in turn throughout the year, or quarterly meetings could be held in London. The secretary should have a salary of £200 a year, and should give most of his time for the first year or two to deputation work and the forming of the local associations.

With a council of this sort and an energetic and whole-hearted secretary, funds would soon flow in, culminating in a really national association of bee-keepers.—HERBERT SAMWAYS, Second-class Expert, Maisybont, Llandebie, Carmarthenshire.

BRITISH BEE-KEEPERS' ASSOCIATION

[7714.] In your valued JOURNAL during the past weeks a quantity of correspondence has appeared relating to the B.B.K.A. in respect to its finance, also to its sphere of work, and whether that work is done worthily as representing the opinion of the body of bee-keepers in the affiliated county associations.

Personally, no one would be more willing than myself to become a member of the B.B.K.A., but one must consider whether membership is an advantage.

At present I am subscribing to two county associations, and one feels, after reading the correspondence lately, some doubt as to whether the affiliated associations are robbing the parent society, or whether the parent society is in competition with the counties.

After reading Mr. Avery's letters on this subject I think he has hit the mark. He evidently has felt, "along with others who happen to reside outside the Home Counties," that the B.B.K.A. has certainly lost its place so far as representing British bee-keeping is concerned.

No matter how keen and capable an apiarist a man may be, if he resides away from London he naturally has no interest in the work of the B.B.K.A., because he sees very little of the work it is doing.

It has been my duty for the last four seasons to visit annually the bee-keepers of the greater part of Cumberland, and I can assure you that, as a body, they hold the same views as Mr. Avery in respect to the parent association, so that it is not surprising that the B.B.K.A. lacks support from counties outside its sphere of influence. No one would question the capabilities of the Chairman and the secretary, but to learn that a man with the experience of Mr. Herrod has not a vote on the Council is surprising, as one naturally feels that the members of the Council should be the cream of apiculturists, and it should be entirely representative.

It appears from the Editor's footnote on page 467 that there is a difficulty in

getting representatives from a distance to attend. Could not this difficulty be overcome by arranging voting papers to be sent through the post on all important matters, such as the recent Foul Brood Bill, after they have been discussed at the Council meeting?

It is not fair for part of a representative body to decide on matters such as the B.B.K.A. deals with, and put aside the opinions of other representatives who are handicapped by distance or fail to attend.

I agree with the suggestion for meetings to be movable, but think that fair representation would be made possible by allotting votes according to the number of members of county associations, viz., one vote to represent, say, fifty members; that means that a membership of 400 would be entitled to eight votes. I conclude by saying that if the B.B.K.A. will work amicably with the counties, the question of finance will be a thing of the past.—Joseph Price, Hadenhill, Old Hill, Staffs.

[7715.] I should like to bring forward a matter in connection with the B.B.K.A. which, in my opinion, should be given very serious attention.

With regard to office accommodation it seems to me three of the special committee want to have palatial offices for the B.B.K.A. and make a great outside show when the funds will not admit it, and when the affairs of the Association are in a very unsatisfactory condition.

Our Chairman has for the second time made the generous offer of temporary office accommodation free of charge to the Association, also a room in which the Council meetings could be held, yet this kindness was almost slighted. It appears he has always been so willing to help the Association that anything he does is taken for granted without the least sign of gratitude on our part; not only so, but some of the members of the Council seem to act as if they would ignore him.

I question whether there were any instructions given to any member or committee to seek out new office accommodation, and should like to know whether there is a minute to that effect. I am under the impression that the three gentlemen I have referred to took the matter entirely into their own hands, and that it has been rushed through without due consideration.

I trust Mr. Cowan's generous offer will be accepted, at least until a new secretary is appointed. It is unwise to bind the Association to expense in their present financial condition, at any rate till matters are more settled.

When a permanent secretary is appointed he may be someone able to offer office accommodation, and a room can easily be found for the annual and other meetings afterwards. The Association can only recover by the strictest economy and saving in every possible direction.—One of the Council.

FEEDING BEES ALL THE SUMMER.

[7716.] I have been intending to write to you for some time past about a matter that came to my notice last autumn. I call it a conundrum, and think that the riddle may be interesting to all *honest* bee-keepers who read the B.B.J. I went into a chemist's shop in this neighbourhood, and saw some section honey standing in glass dishes in a glass case, and noticed that some of them stood upside down. On calling the chemist's attention to the fact, he said he did not know that there was a right and wrong way of placing them, so I showed him which was right, and while he was arranging them he remarked that it had been a bad season for bees. I agreed, and he said he was in Cambridgeshire recently and a bee-keeper told him that he had been feeding his bees all the summer up to August Bank Holiday, and had given them *two tons* of sugar. He also told me the man had fifty stocks. Pointing to his sections, I said he had got some of the sugar there. He said he did not get these from this bee-keeper, and added that a friend had told him if he wanted pure honey he must go to someone who knew little about bees. Now, Sir, if the two tons of sugar were made up into syrup, according to recipe No. 6 of the "Guide Book," he would have given his bees three tons of syrup. Assuming that this gentleman's bees did as well as my own six stocks last summer, which averaged 32 lb. each, they would have gathered very nearly three-quarters of a ton of honey, making the total $3\frac{3}{4}$ tons. Now, my conundrum is: What did the bees do with it, and how can an honest bee-keeper compete with such a man? I hope that some of our craft will try to solve the problem, and let us know the result through the medium of the B.B.J.—W. H. Browne, Harrow.

TALES FROM ARISTOTLE.

[7717.] Mr. Smallwood says, on page 494, that 300 years B.C. bee-keeping was in absolute darkness, but he makes a mistake in going to Aristotle for this statement, as it is quite clear that this philosopher was not a bee-keeper himself, or he would have found out at least some of the errors into which Greeks had fallen regarding bees. Aristotle wrote on wax leaves or slabs the ideas of the Greeks, and the Romans learnt what little they knew about bees from the Greek writers.

Absurd as it may seem now, it is also

easy to see how the mistake was made regarding bees being the product of flesh maggots (gentles), as chilled brood thrown out by bees is something like the meat-fly at about fourteen days old, and once the notion got a start it would live as mistakes live in our own day. However, it is not to Greece or to Rome we have to go for ancient bee-keeping, but to the seat of learning—Egypt. It is clear that about 100 B.C. Egyptian bee-masters were not far behind Mr. Smallwood himself, for they had observatory-hives, and could also expand or contract their hives, and we can do no more. They may not have had a standard frame and BEE JOURNAL, but they must have used either frames or boxes, and as we are but mere babies compared with them in the designing and making of furniture, it is probable that their hives were far superior to our own, and bee-keeping amongst the ancient Egyptians must have reached a high state of perfection. I have searched for signs of apiculture in the world's greatest procession in honour of Ptolemy II. at his coronation, but in vain. Aviculture was represented, but bees, being considered dangerous, would no doubt be kept away. —A. GREEN, Notts.

QUEEN-WASP FLYING ON NEW YEAR'S DAY.

[7718.] As showing the mildness of the season in the West of England, a queen-wasp was caught flying here on New Year's morning, which has been shown to many people here.

Is not this early enough to be a record? [It is unusual, but this is exceptionally mild weather.—ED.]

Bees are on the wing daily. Wishing continued success to the BEE JOURNAL.—J. COATES, Twerton-on-Avon.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON.

Grose's Feeder (page 455).—Is there not a danger of this feeder sagging at the extreme rear sufficiently to give an entrance to robbers? Would not this mischief be averted if the supporting straps were lowered, extended, and inverted, so as to be supported by a nail close to the feeder, and to engage underneath a second nail somewhat nearer the front of the floor-board? The alignment of the feeder would then be independent of the straining pull on the hook nail.

A Bee-canard (page 468).—"How ignorant some people are," &c. Shade of Virgil, doth not thy right ear burn, even to-day? But there may be more in his story than we can now fathom. "Locality" may be the qualifying factor! Who can say that Virgil did not use this means to dispose of a neighbour's dangerous bull? He was no fool, though a trifle credulous! Anyhow, if he really believed in the charm, it but goes to show that he did not put it to the proof. How many of us, I wonder, also put hasty and unbridled pen to merciless paper? Of course we get found out, like poor Virgil. Kipling is particularly unkind to him, and quite openly ranks his bees as so many blow-flies,

> Whose offspring, supping where they supt,
> Consume corruption twice corrupt.

It is enough to make the historically sacred bull turn in his grave. As to the Samson story under discussion, I may perhaps quote some little-known lines, evidently based on the parable:

> Out of the eater came forth meat,
> Out of the strong came sweetness.
> Hear ye the cycle of life complete,
> Naked in all its completeness:
> Life out of death, and death out of life;
> Strength out of death's own corruption;
> Order from chaos, though worlds be at strife;
> Peace out of stress and disruption.

The "Free-way" Excluder (page 468).—Was T. Card using full-depth frames in the brood-nest when the bees trespassed above? It is quite possible to induce supersedure by getting the queen above the excluder, and this may happen accidentally. In the second case which he gives it is certain that the use of the excluder prevented brood-rearing in the super. And shallow-frames are not quite "spoilt" for extracting purposes by the presence of pollen. When extracted, they should be thoroughly cleaned up by the bees, and then filled with water overnight and syringed clean in the morning.

Density and Granulation (page 469).—I have no data at hand, but I am inclined to think that it is a mistake to speak of heather-honey in this fashion as really dense. It is undoubtedly gelatinous, but this quality is not necessarily due to density. Perhaps if "D. M. M." has any particulars available, he will elaborate his comment for us, and correct me if necessary?

"Jumping" Frames (page 469).—

> In the spring the young (bee)man's fancy
> Lightly turns to thoughts of —

spreading brood as likely as not. Let me add my gentle persuasion to that of the fathers, and in the word of the "immortal hunchback" say: Don't. Love is all very well in its way, but this is licence, and some bee-keepers never learn, but every year is to them a leap-year. Up they jump the frames, and out they go into the cold. Some are so prone to the practice that they expect half-dormant bees to take the discipline lying down. Is it any wonder that the bees get the jumps?—for surely this, in unskilled hands, is the "spring" of their discontent.

Supersedure and Deposition (page 469).—Now see how that man "D. M. M." setteth a snare for my valuable time. He mentions my criticism of him on this subject "early this season," and so, of course, I hunt it up, beginning with the first B.B.J. of the year. And lo, it is September before I run it to earth! But the case on page 302, line 25, is dissimilar. This refers to queenlessness without any attempt at supersedure. And I doubted if the old queen could have been "deposed." I still doubt whether deposition ever takes place without prospect of a successor. But how can we prove the case?

Population Returns (page 470).—Yes, of course the most popular colonies give the best returns. This is rather like saying that brown horses eat more than white because there are more of them! Working qualities are, however, of more importance than long tongues, even in the bee-world. Otherwise, the long-tongued bumble-bees might be expected to store the most honey. But cries of "Humbug!" do not quite dispose of the statement of the Roots, whose sincerity is above suspicion, that a hive of long-tongued bees did show a real difference.

Bees and Lucky Days (page 470).—Clearly all these Chinese marriages would consequently take place in the summer, which rule, however arrived at, might be for the great benefit of the race. It is probable that a long time ago—oh, quite before our time—this definite observance of season was as much part of our economy as it is that of the denizens of the woodland and the field.

Fertile Worker Cures (page 473).—Plan 1. Probably they are no longer fed as queens, and therefore become impotent to develop the egg-germs. 2. This plan loses young bees, and the fertile workers may return. I believe they do not occur singly. 4. A small bee-way through the dummy would probably obviate any further manipulation. Yes; this is the best plan of the lot.

Queen Leading Swarm (page 489).—I think this idea is quite disposed of, but it is the queen who settles the ultimate position of the swarm. I have heard tales from old bee-keepers which, if reliable, would go to prove that the queen remembered her flight of the previous year.

B.B.K.A. (page 495).—The present Council are far more capable than the average member imagines, but their versatile powers are of little avail in the direction of reorganisation, whatever their intentions or their scheme, without the right kind of secretary. I cannot help thinking that Mr. Smallwood's suggestion is sound, and that Mr. Herrod, with his well-known business-like ability, should be given a chance to put the parent association into better touch with its children.

Notices to Correspondents.

BEGINNER (Hindhead).—*Dead Bees.*—The bees sent are too decomposed to recognise disease. It is only possible to do so in live or quite fresh specimens. It is probable that they may have died of old age, as it is not unusual to find such bees on floorboard at this time of the year. There was no worm in the tin, but it is probably a larva of wax-moth. If the colony is very weak and infested with wax-moth your best plan would be to destroy it.

R. C. M. (Lincoln).—*Getting Honey out of Combs.*—A honey-press would get it out more rapidly, but for the small quantity you have it would hardly be worth your while to get one. As the honey is granulating heat only will bring it to a liquid condition. Cut up the combs into pieces and put them into a pan, which must be placed in water kept at a temperature of about 150 deg. Fahr. This will liquefy the honey and melt the wax, which will float on the top, and can be removed in a solid cake when cold.

S. S. R. (Rowsley).—*Hard Candy.*—You cannot soften the candy without making it all over again. The condensed moisture will enable the bees to use some of it, and what they cannot use you will find in crystals on the floorboard.

DR. TERC (Austria).—*Bee-stings and Rheumatism.*—We are obliged to you for your communication, which will appear in due course, and we will try to obtain what you require. Different doctors use different appliances, and as many of them are not bee-keepers they have not the courage to apply the stings in the way you do, so have to use what they call "vaccinators."

H. B. P. (Hailsham).—*Honey Samples.*—No. 1 is normal light-coloured honey from mixed sources, rather coarse in granulation. No. 2 is remarkable for the unusual amount and variety of pollen it contains, which gives it an opaque appearance and peculiar flavour. No. 3, on the other hand, is remarkable for the few pollen-grains it contains. It is extremely thin, of very poor quality, with an acid syrupy flavour, which may be derived from proximity to a sweet-shop.

*** *Several important letters, &c., are in type, but held over from pressure on our space.*

Editorial, Notices, &c.

FOUL BROOD IN SWITZERLAND.

We have from time to time kept our readers informed of the progress made in Switzerland by the investigations of Dr. Burri on foul brood. The Swiss Bee-keepers' Association has endeavoured to stamp out the disease by the destruction of affected colonies and a scheme of compulsory insurance against loss by the sufferers. The scheme was formulated in 1906, it was then submitted to the different sections for approval, and finally adopted by them in 1907. There was considerable difficulty in getting all the affiliated associations to agree, and suitable methods of operation had also to be devised. These difficulties, however, were ultimately overcome, and the reports of what has been done have been published in the *Schweitzerische Bienenzeitung*. The report for 1908, the first year of compulsory insurance, states that the society consisted of 108 sections, numbering 7,035 members, and it was necessary to enumerate all their colonies, which were found to number 88,741 hives.

The practical work began by courses of instruction to those who were to become inspectors, twenty of whom were selected for the appointments. Their duty was to clear the whole district under their charge of foul brood. It was found that in 138 apiaries 317 colonies were affected with the disease, and of these 254 were destroyed, the bees were united into strong lots, placed in clean hives, and fed liberally. Special stress was laid on the necessity for the destruction of the spores. Therefore the inspectors were instructed to disinfect thoroughly hives and appliances. For this purpose they were supplied with benzine blow-lamps, as also with lusol, lysoform, chloride of lime, and other chemical disinfectants. They were taught that there were four symptoms of brood-diseases:—(1) Odourless foul brood; (2) strong-smelling foul brood; (3) sour brood; (4) dead brood free from bacteria. This last frequently puzzles even the expert, as it resembles foul brood, and can only be determined by a bacteriological examination. Generally it is harmless, and frequently disappears after lasting three or four weeks. It, however, sometimes develops into foul brood. The bacteriological work was carried out by Dr. Burri and Dr. Kürsteiner, of the Biological Institute near Bern. The financial part of the scheme was some anxiety to the committee of the society. Every member had to pay a compulsory insurance of ½d. for each colony he possessed, and the total thus raised in premiums for the 88,741 hives amounted to 4,437 fr. The expenses, on the other hand, came to 7,500 fr., showing a loss of 3,000 fr. for the year's operations. The Federal Government came to its aid and made the society a grant of this sum, so that it was able to meet all its engagements. The members received the sum of 5,581 fr. as compensation, and forty-two non-members who allowed their apiaries to be inspected and diseased colonies destroyed received 1,080 fr.

The beneficial results are said to be—first, that the unfortunate bee-keepers received some indemnity for their losses; second, general security was increased by reason of the diminution of foul-brood centres; third, the disease being known and declared, it was easier to fight it; and fourth, bee-keepers, being warned, were on the look-out for the first outbreak of disease, and gave information to the proper authorities.

A further report of M. Leuenberger, who had charge of this department of the society's work, up to October, 1909, shows what was done since the previous one was issued. It states that there is a pleasant and an unpleasant side to the question. The foul-brood insurance scheme has during the two years it has been in operation done all that has been expected of it. The scheme has worked well in every respect, the premiums have been regularly and willingly paid by most, and the discontented could be numbered on the fingers of one hand. Instead of compulsory insurance adversely affecting membership, as some predicted it would do, this has increased by 135, and 2,500 more colonies were insured.

The work of the inspectors went on without any hitch, and there have been no complaints about them or their efficiency. Over 200 foul-brood centres have been destroyed at a cost of 8,000 fr., the financial deficit in this case being also borne by the Federal Government. It has been definitely proved that by careful and intelligent proceeding it is possible to cure foul brood.

Now for the other side. It might have been expected that the destruction of 140 foul-brood centres in 1908 would have reduced the disease considerably, even if it had not entirely exterminated it. Unfortunately, during the last year there were many cases of disease—in quite 1 per cent. of the apiaries. It is noted that colonies cured the previous season had remained free from disease, and in every case of outbreak it was in fresh colonies that the disease had appeared. The reason for this is clear. Most of the foul brood was traced to having been caused through ignorance, negligence, indifference, thoughtlessness, or unscrupu-

lousness. Although the contagious nature of the disease is fully described in books, and bee-journals are constantly making allusion to it, there are many bee-keepers (if such they can be called) who never read either a book or the journals, and do not even attend a meeting of bee-keepers, and consequently their colonies suffer from foul brood through ignorance. One of the chief objects of the society was to find out such and instruct them. For this purpose a pamphlet was prepared entitled "Foul Brood of Bees," which enabled those who took the trouble to read it to understand the nature of the disease.

The society has even found it much more difficult to deal with the other cases. There are bee-keepers who do not trouble themselves about the health of their colonies, never examine them, and only discover that there is anything amiss when they notice the bees to be weak or dead, and the hives invaded by robbers. Others will not admit that they have foul brood in their apiaries, endeavour to hide the fact, and try all sorts of remedies until they are overwhelmed by the disease getting the master of them. The unscrupulous sell their infected appliances, and even put out the combs from diseased hives in order that their neighbours' bees may clean them out.

It is evident that nothing can be done in such cases without full legal powers for the inspection of the apiaries. Bee-keepers are powerless, for when an apiary is cleared of foul brood it can easily become infected through any of the causes mentioned above. In view of the fact that the society was powerless to stamp out foul brood without legislation, it has united with the Société Romande d'Apiculture in petitioning the Agricultural Department of the Federal Government, and the societies have asked to have foul brood included among contagious diseases of animals. The insurance scheme which the Government had been helping convinced them of the necessity of taking action, and we now hear that legislation is an accomplished fact, and Switzerland is added to those countries which have protected the industry by legislation. The work is to be carried out on the same lines of compulsory insurance and inspection; only now every bee-keeper will have to pay the premiums and conform to the law. We congratulate our Swiss friends on their success, for now they realise that their efforts to stamp out disease will no longer be nullified by the ignorance or obstinacy of non-members, who will henceforth be obliged under heavy penalties to announce the appearance of disease in their apiaries, and to submit to the regulations prescribed by the authorities.

BRITISH BEE-KEEPERS' ASSOCIATION

The following is a verbatim report of the paper read by the Rev. A. D. Downes-Shaw, the representative of Norfolk at the Council meeting held on December 16. The report of the meeting, which lasted four and a half hours, was necessarily much condensed, but as this paper contains several valuable suggestions, we print it so that they may be considered when the time comes for the further discussion of the reorganisation of the Association. Mr. Downes-Shaw said:—

The importance of this gathering cannot be exaggerated; the practical issue before us appears to be not so much whether the central association should be adequately supported by the county associations as whether the central association should continue to exist. We may regard ourselves to-day either as sympathetic children who have gathered round the bed of a departing parent, prepared to gently close the eyes and give a decent burial, or as medical consultants met with a determination to restore to health and usefulness a valuable member of society whose life is essential to the well-being of the community.

When journeying about the country I sometimes seek out the secretary of the local bee-association in order to exchange ideas about our hobby. To my astonishment, the tone adopted by some secretaries of the associations has often been one of depreciation of the central body rather than one of approbation and kindly regard. Briefly put, expressions of opinions were much like this: "We do not see that we get value for the money we pay. The B.B.K.A. does us very little good, and we could get on almost, if not quite, as well without it." This is an astonishing state of affairs. The fact is that the parent association has, after much trouble, given birth to children who are now scattered over the country. These have in many cases grown into sturdy youngsters who, beginning to feel a firm pair of legs beneath them, are, in their youthful, thoughtless ecstasy, too often ready to bid farewell to their parent and start out entirely on their own, forgetting that they cannot flourish alone. They feel perhaps somewhat irked by a mild restraint, and, not being free from the taint of human selfishness, they dislike helping to maintain the one who gave them birth and nurtured them in years of helplessness and ignorance. Now, whilst the resolute and plucky struggle for existence on the part of these thriving youngsters wins our admiration, and though the kindly parent is only too ready

to cut off all her own luxury and is almost prepared to starve to death rather than impede the growth and prosperity of the well-beloved offspring, still there are reasons why this lust for independence, this ambition to be free from restraint, this dislike of a just liability, is not wise, and should be fought shy of by the county branches themselves, and there is just cause why the parent society should endeavour to restrain them from cutting themselves adrift to their own detriment and loss.

It is my desire to point out that the decease or the crippling, through want of funds, of the central association would be an irreparable loss to the county associations, and mature consideration will convince bee-keepers at large this *is* so. Now, we cannot overlook the fact, admitted by all sorts and conditions of workers, that a central authority *is* essential to the well-being of all trades, guilds, clubs, industries, and sciences. There is not one flourishing industry or profession but is represented by a central committee or body. "Whitaker's Almanack" gives a list of about 500 societies, most of which are merely the headquarters of branches operating all over the country. And what divergent works these represent! Musicians, geologists, botanists, entomologists, artists, agriculturists, doctors, lawyers, architects (to mention but a few), all have their central office or society. Sports, arts, religious sects, professions, trades, learned societies, all have their central governing bodies, and they could do little without them. The great armies of workers, too—artisans, traders, school teachers, ministers, shop assistants—although all possessing their local associations and clubs, yet they support and value their governing centres, which act like the brain or nervous system of the various organisations.

It is a truism to state that the more efficient and powerful the central association the more prosperous will be the guilds or clubs scattered over the country. We all know that this is so, and yet, strange to say, we hear bee-keepers talking as if that which is essential to all other industries and crafts is a negligible quantity with them—as if that which all other bodies of workers cannot prosper without, bee-keepers can be superior to and can disregard. Surely we bee-keepers are under similar commercial and social conditions to those of other workers: what affects them affects us, what aids them will benefit us. Our county associations, it is true, exist, and indeed flourish, with a central association which is in danger of becoming moribund, but that does not show that we can prosper without one, were it to die; rather it suggests how we should waltz along if we had a tip-top, double-barrelled, go-ahead centre, thoroughly up-to-date, efficient, powerful, and influential. I am full of hope that this association will rise to greater usefulness and power than ever before, and that it will exist, not (as some seem to think) to suck the life-blood from the struggling daughter associations, but to guide, energise, and encourage these branches, so that apiculture shall not be what it is now—a languishing industry, disregarded by the multitude, despised by many, and supported by few, but one of the staple industries of our rural districts, a real boon to the cottager, a useful, and indeed necessary, addition to the small-holder, and a recognised part of the curriculum of secondary schools.

Apiculture should be the honoured handmaid of horticulture, and to that position it may easily be brought under the wise guidance of a strong central society. The function of the central body is not restrictive; it is scientific, advisory, and social. It should be the repository of all the lore of the honey-bee to which the county associations could turn for information on any point of doubt. It should be the authority to which could be referred all questions of dispute, legal matters, valuations, questions of policy, commercial detail, &c. It should be the recognised authority for dealing with the Government as to legislation; also for intercourse with foreign societies. It should be the college able to issue diplomas to competent bee-workers. It should also be the central club where bee-keepers from all parts of the Empire would find, in addition to suitable appliances—*i.e.*, literature, lantern slides, microscopic slides, charts, models, &c.—a meeting-house, a welcome, sympathy, and brotherly interest. And here may I venture to suggest to the Council that, at this critical stage in our history, this moment of transition (I trust) to a higher and better state of things, *now* is the time to make a great effort to put apiculture in its right position in the Empire. I venture to affirm that we do not take a sufficiently high estimate of our position, nor do we place our work at its true level. The very title of our society suggests this to the world and places us in the second grade among learned societies. This body should not, in my opinion, be called the British Bee-keepers' Association: it ought to be the Royal Apicultural Society of Great Britain. We are not an association of traders, but a scientific society. Why should not the organisation be now remodelled? Why not take for this society a new title, such as the one suggested, which should adequately proclaim to the world its status? Yes,

why not "Royal" as much as many other societies, far less useful, far less essential to the nation than this is? Is it impossible to get Royalty to take an interest in this great industry? I think not. We are blessed with a Ruler who is wise and kind, one whose goodwill is always with those who labour for the well-being of the nation. Why should not his gracious Majesty consent to be our Patron? The probability is that he would if he were approached wisely; at any rate, why not try? Then, again, think of the long list of good men of title and influence who are always willing to help worthy causes by being vice-presidents, &c. Certainly, if we get Royalty to patronise our efforts, and have the names of titled men as backing us up, then our central society will no longer have to go round hat in hand begging for 5 per cent. of local profits. It will gain its right position, and local associations will feel it an honour to be affiliated, and as for money—well, once get Royalty and a good sprinkling of nobility, and money-bags will not be lacking. There is generally a good stream of gold ready to flow in the channel marked out by a Crown and decorated with coronets. Money difficulties will fade away when we get the ship into the right course.

Most assuredly we have a good start: our cause is an ancient and honoured craft; it is an essential industry in our land; we have in our Chairman a man learned, courteous, and in every way fitted to guide the scientific and practical departments; in our acting secretary we have a man thoroughly capable of making this society a success; in our members we have keen and enthusiastic workers; in our local associations we have branches of which any society or guild might well be proud. Let us, the whole body of British bee-keepers, then, rise to our opportunities, let us unite hand to hand as a band of brothers, and we will soon show the world that apiculture is not merely a pastime but a national necessity; that we are not a sect of feeble visionaries, but a band of capable and practical men; and that, even if the little busy bee has a sting in her tail for meddlesome folk, she has also in her honey-sac a golden store of wealth for all who will handle her kindly, wisely, and perseveringly. We will show that our aim is a high and worthy one; that we intend to uphold in ourselves the splendid traditions of the great learned societies of our land (amongst whom we proudly take our place) by promoting knowledge, assisting in the strenuous struggle to win from Nature the food of the nation, and doing our part to make our land a veritable modern Canaan, "a land flowing with wax and honey."

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of December, 1909, was £1,558.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ANCIENT EGYPTIAN BEE-KEEPING.

[7719.] Will Mr. A. Green, Notts (7717), be so kind as to inform the readers of the B.B.J. on what authority he makes this statement in last week's issue, page 11: "It is clear that about 100 B.C. Egyptian bee-masters . . . had observatory-hives, and could also expand or contract their hives. . . . They must have used either frames or boxes." I have devoted much time to this particular matter, without finding anything to make me believe that the ancient Egyptians were advanced bee-keepers. There is ample evidence that for various purposes honey and wax were used in Egypt from very ancient times, and probably in large quantities; but much of this may have been collected by wild bees. The only instance known to me of a hive being depicted on an ancient monument is related by Sir Gardner Wilkinson in "The Manners and Customs of the Ancient Egyptians," vol. ii., chap. 11 (new edition, London, 1878), as follows:—" . . . To the garden department belonged the care of the bees, which were kept in hives similar to our own (I remember to have seen them so represented in a tomb at Thebes)." As this passage was written in 1837, it is almost certain that the author believed the vessel depicted to be a bee-hive in the nature of a straw skep. He gives no illustration to enable us to judge for ourselves.

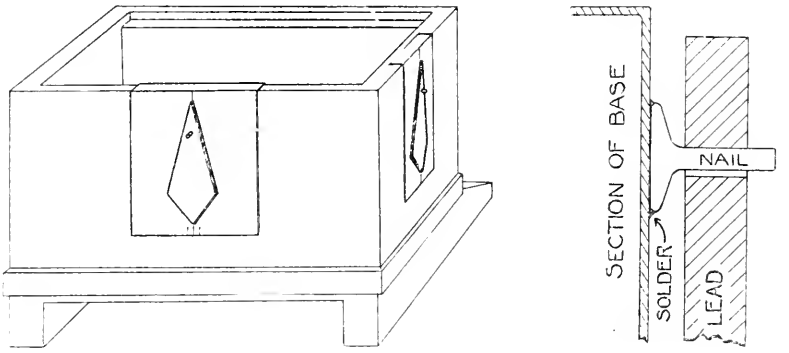
No one can doubt that by such a highly civilised people as the ancient Egyptians bees were kept in a state of domesticity, nor will any bee-keeper fail to recognise the ruler of the hive in the conventional symbol of governance that occurs so frequently in their hieroglyphic inscriptions. There is nothing in this, however, to warrant our crediting them with observatory-hives, or anything more than elementary bee-keeping, and it seems to me very unlikely that any hives were commonly employed but the roughly-made cylindrical hives of clay or clay and ashes,

such as have been noticed by travellers, and described in various books and journals during the last fifty years as being still in use in Egypt and Palestine.

It is only in the hope of obtaining further information that I raise a doubt as to the correctness of Mr. Green's deductions. I shall be delighted to learn that another bee-keeper has been more fortunate than myself in his researches.—H. J. O. WALKER (Lieut.-Colonel), Budleigh Salterton, Devon.

A CHEAP HIVE-LEVEL.

[7720.] I see that the masters of the craft are raising the dust over the levelling of hives. A really good spirit-level is rather costly for ordinary bee-men, so here is a device for effecting the same end. The sketch will almost explain itself. It shows a simple lead plummet hung upon a nail soldered to a tinned iron base-plate. The "tin" is bent at right angles along the upper edge, and a centre line is squared down its face, the line passing through the nail. Side lines may be added to give an equal amount of forward tilt to the hives if desired. The sketch shows the device in use, and also an enlarged section.—R. GROSE, Bodmin.



A CHEAP HIVE-LEVEL.

CURRENT TOPICS.

[7721.] *Breeding a Strain of Bees.*—I note that Mr. Woodley says (page 486) that the driven lot of bees he mentioned were originally a swarm from his own apiary, but this scarcely entitles them to be called a strain. Mr. Woodley's bees are, I take it, as English as English bees are or can be at the present time, and that is not saying a great deal. For it is practically impossible to avoid contamination with the yellow races. Many years ago the "Renfrewshire Bee-keeper" gave an instance of cross-mating by Italian drones from his own apiary with black queens from an apiary fully five miles away. Thousands of Italian queens have, I suppose, been imported since that time, each safely-introduced unit of which formed a cross-mating centre for the neighbourhood. Where, then, shall we hope to find the "Old English" bee in its purity? And remember the same thing is going on *all the time*. There is nothing whatever to prevent Mr. Woodley's queens from mating with drones from surrounding apiaries, and the queens of these will in turn mate with drones from still farther afield. Mr. Woodley has told us more than once that he is glad to use queens raised by swarming stocks—in fact, he prefers such to any other—but this looks much more like breeding for swarms than for honey-production.

Mr. Sladen's is the best attempt to produce a strain of bees with which I am acquainted, yet even he can only select his *queens* individually—his drones are selected "in the lump" or collectively. One can imagine him saying to his fifty or hundred young queens: "Now, my beauties, here are some twenty to fifty thousand prospective husbands on the wing, and I *do* hope that most of you will choose the handsomest and yellowest drones you can find." And the result? Well, it is quite as good as we can reasonably hope for, albeit only a little more than half of his queens mate exactly as he desires.

Brace-combs.—These, says Mr. Crawshaw (page 499), cannot be said to "brace" when they are only attached to the separators. I quite agree. What, then, shall we call such? I suggest "freak"-combs. He further suggests that the narrower, no-bee-way sections will probably be more free from brace-combs than the ordinary 2-in. sections. This is a curious instance of the same idea striking two minds at about the same

time; for I have thought the same thing, reasoning that the cluster in, say, a $1\frac{3}{8}$-in. section would be necessarily more compact and less liable to off-shoots. I hope to have an opportunity of testing this matter next season, having ordered a thousand 5-in. by 4-in. by $1\frac{3}{8}$-in. sections. I propose using these in the "Danzenbaker" pivoted frames (without top-bar) and with pivoted slatted dividers.

Queen-excluders.—Will those interested kindly note the experiment of "G. S. N." (7703), wherein, by omitting the excluder, he lost, say, 8s. worth of sections, and gained nothing?

"T"-*girders.*—"G. S. N." says that these have been stupidly used wrong way up, but it was probably necessary (in the first instance) that they should be used in the orthodox way, as the projections formed supports for the plain separators then used, so as to allow a bee-way at the bottom. His plan of gluing a strip of baize round the bottom edges of section-rack is a good one so far as making it more snug is concerned; but what about cleaning the propolis off it? The late Mr. W. B. Carr used to wedge in slips of folded newspaper for the same purpose.

Swarms versus Stocks.—Mr. Crawshaw thinks that the difference in honey-production between stocks worked for extracted honey with excluders, and swarms worked for sections also with excluders, was chiefly due to the use of the latter. But my idea is that the difference was due, first, to the freer storage in ready-built combs (for extracting), and, secondly, to the difference in honey-storing power between stocks and swarms.

Fertile Workers. — It is nearly thirty years since I got my first stock of bees (in a skep) and made my first frame-hive, and during that time I can say that fertile workers have never (to my knowledge) given me any trouble. As for drone-breeding queens in the spring, I question whether I have had more than half a dozen altogether, and during the whole of my bee-keeping I do not think that I have had a dozen stocks die right out during the winter. I do not attempt to account for these things, but merely give them as facts. Wishing all bee-keepers a prosperous season in 1910.—SAML. P. SOAL, The Old Rectory, Rochford, Essex.

TALES FROM ARISTOTLE.

[7722.] It is possible that some of the readers of the BEE JOURNAL have not had an opportunity of making the acquaintance of Aristotle. As perhaps the earliest writer on apiculture, he must be of interest to all members of our cult, and a short sketch of his career may not be out of place.

Born at Stageira, a Greek colony of Thrace, in 384 B.C., the son of a physician, he received an education to fit him for the family profession, but his inclinations did not tend that way. At the age of eighteen he left Stageira for Athens, to become a student under, and a disciple of, the great philosopher Plato. Needless to say, he was a very apt pupil. He devoted himself to scientific study. In zoology he excelled, for his early training had prepared him for anatomical dissection, and he wrote many treatises on that subject; but he was also pre-eminent in his age as a philosopher, a rhetorician, and a poet. He was the tutor of Alexander the Great. He died in his sixty-seventh year. His writings about bees and other insects are interwoven in his treatise "Of the History of Animals," with dissertations as to the habits of all kinds of creatures that "live and move and have their being," and he has a habit of repeating himself. Therefore it is at times somewhat difficult to pick up the thread of his discourse.

In the absence of a more accurate classification, he divides the bee-family into comb-makers and those who do not make combs. The latter do not interest us, but of the former he says "there are six kinds who are gregarious," which he enumerates—bees, king-bees, drones, the yearly wasp, the hornet, and the tenthiadon (a kind of wasp), and in all his treatises he assumes that the three first-named are of quite distinct species, but inhabit the same hive. It is necessary to remember that what he calls "king-bees" we call "queens." It would have been derogatory to Grecian pride to think that a female could rule the republic of a hive. Suffragettes in those days would have had very curt treatment. The social position of woman was inferior to that of man. Society was waiting for the advent of Christianity to elevate the wife to her right place as the companion and helpmate of the husband, and to make the consideration shown to woman the hall-mark of civilisation.

But to return to our subject. The generation of the bee is a mighty mystery to him. He cannot fathom how they are created. We know how they are hatched from eggs, but in no part of his writings does he allude to them. "A very small brood is seen in the cells having the nature of a worm," he remarks. He seems to have a hazy idea that they "growed," like Topsy in "Uncle Tom's Cabin":

> Topsy never was born;
> Topsy had no mother.
> 'Specs she growed like other nigger brats,
> Without any father or mother.

How that worm got there—"Ay, there's

the rub." As to the generation of bees there is much diversity of opinion. Again, he writes: "Some think they generate without intercourse of sexes, as do fishes. [Evidently these animals had not been studied much in those days, nor the progression of salmon up the rivers been observed.] Some think they carry the young of bees from another place, where they are spontaneously generated, or are generated by some other animal; and, again, others think that it is only the drones who are brought from afar. And, again, others think that drones breed drones, kings breed kings, and bees create bees; and yet others say that the drones are females and the bees males." But the arguments pro and con of this subject I will give in my next.—J. SMALLWOOD.

BRITISH BEE-KEEPERS' ASSOCIATION

[7723.] My letter on page 446 of the B.B.J. appears to have been unsatisfactory to two prominent bee-keepers. May I be allowed to answer the questions raised concerning it? First: Mr. Avery (page 466) estimates the weight of imported honey to be 800 tons, and "D. M. M." increases it to 1,500 tons. I took a low estimate on purpose, because British people take a long time before they begin doing anything, and it is as much as can be hoped that an extra 400 tons will be raised this year. When that has been done, it will then be time to arrange about raising the other 1,100 tons. In reply to "D. M. M.'s" statement (page 493) about Scotch honey, this was certainly a mistake on my part. "English" should have read "British," as there is as great a demand for "Scotch heather" as for "English clover" honey, and I did not leave our friends north of the Border out of my calculations.

Second: With reference to Mr. Avery's third paragraph—(*a*) If he is not sure of the correctness of my figures, he can work them out for himself. I got mine from the B.B.J. for 1908 and 1909. (*b*) In answer to his question, "Would the money now sent abroad be kept at home?" I say "Yes, if British bee-keepers are determined that the public shall buy their honey in preference to the imported article." The majority of people who have sampled both British and foreign honey infinitely prefer the former. But they buy the latter because it is always to be had, and is much cheaper. Colonial and foreign honey can be had from 6d. to 10d. a lb., while 9d. to 1s. 3d. is asked for British. If more honey were produced the price would be decreased a little, but the demand would enlarge in proportion.

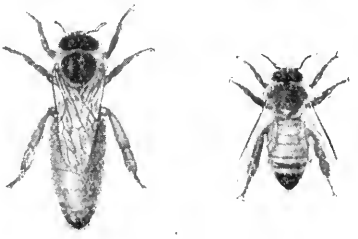
Third: In conclusion, I should like to refer to Mr. Avery's next paragraph dealing with my "Socialistic proposal," &c. I say that what is wanted now, if we are to raise the extra 400, or 1,500, tons of honey per year, is a quantity of fresh bee-keepers, all belonging to either their county or the parent association; and the only way that this can be done is to have a low and uniform subscription. Also that the people who now pay a 5s. or 10s. annual subscription might, and probably would, pay 2s. 6d. subscription and give a 2s. 6d. or 5s. donation. The associations would not then have less money than they have now; the list of subscribers would be longer. By "pooling their revenue with the B.B.K.A." the prosperous counties would not be in the least hampered, and those not so fortunate would receive assistance. The B.B.K.A. would also have sufficient money in hand to be able to devote its attention to any matters affecting the interests of bee-keepers generally, and would come more into contact with its offspring, the county associations. My illustration of this, by a "hive and its bees," has been dubbed sentimental, but I chose it because the facts are so well known to all bee men. Mr. Avery illustrated the same idea by colonies sprung from a parent hive. Here we have two pictures. In the first, all work for a common object; the object is accomplished, and everything is satisfactory. In the second, we have a reproduction of what is happening at the present time. The county associations or colonies separate from the B.B.K.A., or parent hive, and become independent. All the members, or bees, work for the county association or colony, becoming, as time goes on, more self-centred and out of touch with the parent hive and the other county associations, or colonies. It is for us bee-keepers to decide which of these two pictures we prefer. I, personally, vote for the first. The B.B.K.A. has an excellent and practical secretary, and I hope before long that both it and the county associations will be grafted into each other. To do this we must have a common cause, and all work for it. Bee-keepers have the cause already, namely, to get a bigger market for our British honey by inducing people to spend the money which now goes to the foreigner with us instead. If this cause is to be a prosperous one, individualism must cease, and unionism take its place. Mr. Smallwood reminds us, on page 494 in B.B.J. of December 16, of Æsop's fable about the bundle of sticks. Let us put it into practice, and remember that "united we stand, divided we fall." I conclude by wishing all bee-keepers a prosperous New Year.—W. G. COATES, Chelsea.

ADDITIONAL NOTES ON BREEDING THE BRITISH GOLDEN BEE IN RIPPLE COURT APIARY.*

By F. W. L. Sladen, F.E.S.

Like ordinary English black bees, British Goldens are easily shaken from their combs and are inclined to run about the hive when disturbed. In these particulars they differ and may be distinguished from American Goldens and from Italians.

The objection may be raised that, considering the impossibility of knowing which drone out of thousands a queen may meet, the breeding by selection on the male side cannot be properly accomplished. But if we look at the work of plant breeders we see that a similar uncertainty often exists as to which flower will supply the pollen by which the seed is fertilised. Further, in cases where characters that do not show themselves in the flowers, such as the size, shape, or other qualities of seeds or fruits, are bred for, the selection of flowers is useless. It is only essential that no flower shall be employed that is not of the selected parentage or strain.



THE BRITISH GOLDEN BEE.
THE GOLDEN-COLOURED QUEEN AND WORKER.

I think that even were it possible to select single drones for breeding from, it would not be advisable, for we may be sure that the honey-bee depends partly upon the natural selection of drones for its vigour and usefulness. It is not asserted that one drone transmits exactly the same characters as another, but this uncontrolled element of variation is reduced to a negligible quantity by the employment of pure stock and continuous careful selection.

Of late years much progress has been made in the general science of breeding, and one of the valuable points that have been brought to the front is the importance of breeding from specimens that have been proved to be best able to transmit their desirable qualities to their offspring. In the work carried on in Ripple Court Apiary every queen bred from has, of course, been proved to produce industrious and vigorous workers; but it is desirable to go further, and to breed from queens that have been proved to be best able to transmit to their queen-daughters the power to produce such workers and any other qualities bred for. For example, the colonies produced by the daughters of the "V" queen (all of which were golden-coloured), when tested for utility and vigour in 1909, did much better, on the average, than the colonies produced by the golden-coloured daughters of the "C" queen; consequently, a great number of queens were bred from the "V" queen and her daughters in 1909, but none were bred either from the "C" queen or from any of her daughters. It is true that this method of breeding increases in-breeding, but its value for fixing, maintaining, and improving any particular type is undeniable, and breeders of other animals have found that the danger of deterioration resulting from close in-breeding is not so great as has been supposed, provided the breeding stock is vigorous and healthy. So far no sign of any ill-effect of in-breeding has been detected in the British Golden breeding stock.

Up to the present the working of this method of breeding has been somewhat hampered by the work of quickly developing a distinctly British variety, this having involved selecting a fresh generation each year; but now that British Goldens have become established as a separate breed, the work of selection may well be spread over two years if it can be accomplished more thoroughly. All the breeding queens selected in 1909, also a number of the daughters of each of them, are being wintered. The testing of these daughters for utility and vigour in 1910, together with the re-testing of the breeding queens themselves, will probably show very clearly which are the best of the breeding queens, and from these best queens I hope to breed largely.

* See the series of articles, "Breeding the British Golden Bee in Ripple Court Apiary," in the last four December issues of the B.B.J.

Queries and Replies.

[3984.] *Starting Bee-farming.*—I shall be very glad of a little advice from you, as I wish to take up bee-keeping in earnest under the following circumstances. I have, owing to chest trouble, given up my situation in London, acting under strong advice from doctors, &c., and have now settled in Cornwall. I am quite able to do a fair amount of work, providing it is not of a "navvy" nature, and have been going very seriously into the question of bees with a view of making a profit from them. I am quite without experience other than that of reading the "Guide Book" several times, and of being a subscriber to the JOURNAL for some months, but I have the advantage of having the whole of my time available for

anything I undertake, and as I used to bear the reputation of being a pretty good business man, and held a responsible position in one of the largest London companies, I do not think I am a bigger fool than the majority of mankind, and therefore see no reason why I should not eventually make a success of it. I might say that as a winter business I am endeavouring to work up a connection in oysters, this being one of the dredging centres, so that one ought to work well in with the other and neither clash. I am aware, of course, that the rule is for a novice to start very slow with perhaps a couple of hives, and learn the management gradually, but I do not want, if possible, to waste another season; at the same time, I do not want to invest in too many hives, and perhaps make a muddle of things in consequence. My garden is 120 ft. by 20 ft., lying north and south, rather exposed, especially to the south-west, overlooking Falmouth Bay, field on north and west, gardens east, and half a dozen houses south. I propose having two or three hives here for close observation and, so to speak, to practise on, and I have obtained permission to place hives on a farm a couple of miles inland, where there are about three acres of orchard; they can be placed in the orchard, and will be completely sheltered from north, east, and west winds, and fairly well from the south. I have also the use of a room for storing appliances, &c., adjoining the orchard. 1. Shall I have a fair prospect of success, providing I use my wits and keep my eyes open? 2. What is a fair average yield per hive in a fair honey year? 3. Which is better to work for, comb or extracted honey? 4. To take advantage of earliest honey-flow it is, I presume, necessary to purchase stocks in hives? 5. If so, what is the earliest date they should be purchased? 6. And if of private people or of tradesmen? 7. If of the former, is a guarantee of freedom from disease of very much value, as I should think it would be only throwing good money after bad trying to enforce it if disease *were* found? 8. Is gorse bloom of any value for honey, as there are acres of it in this district in February and March, and we get many warm days even then here? 9. Buying stocks now of course means hives as well; but for extensions, swarms, &c., I should, being a fair amateur carpenter, make my own hives. You give details of one pattern in "Guide Book" to work from; can this be improved upon, and is it not advisable and economical to use as large hives as possible? 10. Seeing one can always contract to any space, but not expand beyond the limit of the hive, what is the largest hive advisable to be used? 11. What is the best race of bees for my purpose? 12. I do not quite understand what the "eke" of a hive is for; will you please explain? 13. Can insurance against damage to cattle, &c., by bees be effected? I have seen this mentioned in the JOURNAL, but can trace nothing definite. 14. Is there a Cornwall Bee-keepers' Association? If so, will you please give address of secretary? Please accept my apologies for length of this, and my thanks in anticipation.—BACK TO THE LAND, Cornwall.

REPLY.—Bee-keeping, like any other business, must be learned, and we would therefore strongly advise you not to start on a large scale. You must learn to keep bees before depending on them to keep you, and, if possible, it would be worth your while to gain a little practical experience in an apiary where bees are worked with profit to their owner. If you are not able to do this, start with a few hives and increase as you gain knowledge. Your district is a good one for bees, but you will have to shelter the hives from south-west winds which prevail. 1. Yes, if you have the ability for it. 2. Thirty to fifty pounds, or even more. 3. This depends on which you have the best sale for. Extracted is less trouble, and the honey can be kept in tins for a long time. Sections deteriorate by keeping, and if you had no ready sale for them would entail a loss. 4. Strong colonies are absolutely necessary, but we would recommend you to start with swarms, and not purchase stocks. 5. In March, as soon as you are able to examine their condition. 6. If you are not able to examine the bees yourself, purchase of reputable dealers who advertise in our columns. 7. If unable to examine them you should have an expert's certificate as to their condition. 8. It has explosive flowers, and is only of use to bees for the pollen, which is abundant. 9. The general principles on which a hive should be made are given, and so long as you stick to the standard frame you can make your hive to hold as many frames as you like. 10. From ten to fifteen frames would be large enough, depending on the system of working. 11. British bees. 12. An "eke" is shown on left-hand side of Fig. 24, page 44 of "Guide Book." It is used for placing below body-box in wintering bees, thus giving the cluster room to hang without touching floorboard. 13. Yes, you can get particulars from the secretary of the B.B.K.A. Insurance commences in March of each year. 14. No.

[3985.] *Prevention of Swarming.*—I should like to know if you have had any experience personally of the "Brice" appliance for preventing the loss of swarms, and whether you think the honey crop would be greatly lessened by using it. This year I have had, for the

third year in succession, a splendid honey crop, averaging, in clover and heather together, 50 lb. of comb-honey per hive. I have also had my first experience of swarming, all my hives sending out prime swarms. No doubt this excessive swarming was due to the age of my queens. I had no swarming either in 1907 or 1908, and got a very good surplus in both years. I have read your articles on queen-rearing and artificial nucleus swarming, &c.; but the trouble with us here in this part is that even by feeding we cannot get drones flying until the end of May. It would then be about three weeks later before we could get a queen fit for fertilisation, and by that time a number of the hives will have swarmed. In fact, I saw one prime swarm, the first in the district, with hardly a drone present, so that it just seems to me to be like carrying coals to Newcastle to force on queen-cells out of season. What is the earliest date at which I can purchase young fertilised queens from English bee-keepers? I have now ten hives, and do not object to swarming; but I certainly object to losing swarms, and I dislike having to hunt about other people's gardens for them. I have read about clipping the queen's wings, but I would rather go to the expense of putting the "Brice" appliances on all my hives than be bothered with hunting for the queen and disorganising the whole colony. I fail to see, if good crops can be secured by stocks with queen-excluders, why they should be a failure when using swarm-catchers. Of course they can now be had with wire-excluding metal. Hoping to have your opinion in an early issue of B.B.J.—INTERESTED, Kirriemuir.

REPLY.—We have no use for the "Brice" appliance, as we are generally able to prevent swarming without it, but it is very useful to those who are not able to do so, and the illustration on page 23 of "Guide Book," taken when a swarm was actually being caught by means of such an appliance, is sufficient evidence of its usefulness. It should not greatly lessen the crop, as bees can get through the excluder-zinc in front as easily as they can when it is placed above the frames. You can generally get young fertile queens by the middle of June—some breeders even advertise them in May.

Notices to Correspondents.

D. K. (East Lothian).—*Race of Bees.*—From the completely flattened and crushed bee, it appears to be of the common black race. If the colonies are backward and weak either the race has degenerated through weakly queens or there may be something amiss with the management, which may be unsuited to the district. Hardy British bees should do well in your locality.

S. C. S. (Motcombe).—*Mouldy Combs.*—If not too badly affected, spray them with a 10 per cent. solution of formalin, and afterwards thoroughly syringe them with water until quite clean. If there is mouldy pollen, this is best removed by scraping the comb away to the mid-rib.

A CONSTANT READER (Cheltenham).—*Propagating Disease and Bees Building Drone-comb.*—1. Undoubtedly contaminated water would be injurious to bees, although possibly not to the same extent as to man. 2. Yes; disease germs have been found associated with pollen. 3. Yes; a good honey-flow is favourable. 4. You cannot ensure all worker-comb with starters only, and your using these and putting them in the centre of brood-nest for the purpose of spreading brood was an inducement for the bees to build drone-comb and to rear drone-brood. Bees headed by a young queen are less inclined to build drone-comb, but in any case the safest way to proceed is to use full sheets of worker-comb foundation.

J. A. H. (Gerrards Cross).—*Starved Bees.*—1. It is evident that the bees took to the three frames on one side of the division-board because they found this part more comfortable than the larger space on the six frames, the cluster being too small properly to fill it. They consumed what stores they found in these combs, and, being prevented by the cold from passing beyond the division-board, have died of starvation. 2. There does not appear to be anything the matter with the comb sent, so the combs containing syrup can be kept in a warm, dry place, and could then be used in the spring to assist the bees. 3. It is always advisable to disinfect hives after use.

Honey Samples.

W. P. R. (Penmachrw).—Sample has been a honey of fairly good quality, with no distinctive flavour; but it has granulated very coarsely, and is beginning to ferment. When honey is granulating it should be stirred occasionally, as this tends to produce a smoother and more even grain. Sample is not suitable for show purposes.

T. W. W. (Broomhills).—The aroma of your honey is rather peculiar, but the flavour is fairly good, though it has granulated very coarsely (see reply to "W. P. R."). It has been gathered from mixed sources, and the strong smell is due to one of these, but it has not affected the flavour at all.

Editorial, Notices, &c.

BEE-KEEPING IN RUSSIA.

There is probably no country in Europe where bee-keeping has been carried on so extensively as in Russia. There the peasants use honey instead of sugar, and the churches make a heavy demand for wax tapers. It is said that in the Government of Ekaterinoslav, in South Russia, there are nearly four hives to every inhabitant. There is a long and interesting article in the *Revue Française d'Apiculture* by J. Patouillet, who says bee-keeping has been known and practised in Russia from time immemorial. A traveller named Gall, who visited that country in the eleventh century, said that all parts of Russia—the steppes and forests—abounded in hives, honey, and wax. Folk-lore, chronicles, and many surviving evidences testify to the importance of this industry from an economic, domestic, and religious point of view.

Formerly Russian princes levied on their conquered enemies tributes of honey and wax, their own subjects paying taxes in the same manner. In Little Russia, before its union with Russia proper, there existed a tithe in bees, which consisted in carrying to the seignior a tenth part of all the honey produced in the hives. At the beginning of the eighteenth century a single forest-domain of the Government of Kiev paid the seignior annually as much as 200 barrels of honey, each barrel weighing 10 pouds (361 lb.). One understands from this why the Russian legislature (*Rousskaya pravdar*) endeavoured to protect the interests of bee-keepers by passing stringent laws against anyone injuring their industry or stealing bees. From the earliest times Russia exported honey and wax to Greece, then in the Middle Ages it supplied the Danubian towns, and later there were exports to Western Europe viâ Novgorod, Pskow, Moscow, Kholmogory, Vologda, and the White Sea. There was also a guild of "wax merchants" in Novgorod in the Middle Ages. During the sixteenth century, under Ivan the Terrible, the English living in Russia sent out of the country 800 tons of wax viâ the White Sea, and this caused a temporary stop to be put to such exportation, but in the seventeenth century 560 tons of wax were sent to Italy. The production of wax was principally confined to the south-western Governments. Honey entered largely into the preparation of favourite national dishes, and also for the innumerable varieties of *prianiki* (gingerbread cakes) so extensively used. It was also used as a medicine in many ailments until scientific medicines replaced it. Hydromel was the ancient Russian beverage, and of this there must have been many varieties, if one may judge from about twenty different names which one comes across. There were a great many breweries making hydromel, and some of them are even in operation to this day, for it is still a favourite drink with many Russians.

AMONG THE BEES.

BY D. M. MACDONALD, BANFF.

AFTER THE DARK COMES THE DAWN.

The year 1909 was persistently bad, the last three months being particularly stormy. During all October, November, and December my bees never had even a partial cleansing flight. With the dawn of the New Year came a pleasant change, doubly welcome to many of our high-lying farmers, who only then finished harvesting their much-bedraggled grain crops. Compared with losses like theirs our wail for want of surplus or complaints of small "takes" seem puny. With the delightfully mild, dry, and pleasant weather during the first week of 1910 the bees had a romping time of it, and the marked evidences on and around every hive showed that the relief to them was timely. Now, starting fresh, with all their stores rearranged, and the winter cluster ready to contract again with the threatened approach of cold, they should be in the very best form for standing a siege from what part of winter still lies before us; for, of course, we are not out of the wood yet. Examine all quilts and coverings, removing any that are damp and mouldy. Give attention to any hive-roofs which have admitted even a gentle percolation. A two or three pound cake of candy placed over the tops of frames of any stocks suspected to be short of stores may preserve the life of the starving colony. Any necessary manipulations must be done gently to keep the bees as quiet as possible. Happy are those who have to give no attention to the bees until spring is well forward.

Two Honey Plants.—Buckwheat is very extensively grown in America, but, so far as I know, little of it is cultivated in this country. Coming in as it does after white clover has ceased to bloom, it would, however, considerably extend the honey season if it proved successful here. I am informed that it has been experimented with by Mr. Taylor, Welwyn. If so, and if it has turned out worth cultivating, he would greatly oblige many bee-keepers by supplying them with some useful information on its value as a bee-forage plant and its successful cultivation. Another late bloomer is Bokhara clover. Bees work on it all through October, and at times it flowers right on to the end of November. Here is another source worth tapping. Perhaps

somebody can give us some reliable information in regard to its value as a late honey-yielder. While buckwheat requires almost continuous dry weather to make it yield well in autumn—which our variable climate does not always supply—I think melilot might not suffer if good days could be ensured for its profitable working. But, then, it is not a good forage plant. Buckwheat, while a splendid bearer in parts of America, does not always yield nectar well in other parts.

While I am thus searching for some late honey plants, I am not certain if they are generally desirable. Perhaps bees in October and November are better indoors.

Apicultural Stations.—Two at least of our self-governing colonies have instituted, under the ægis of the Government, one of these bee-farms paid by the State. In Ontario, Canada has an apiculturist and staff of apiarians in connection with the Agricultural College, whose duties are to lecture on bee-keeping to the college classes, to conduct experiments in the fertilisation of blossoms by bees, and to carry on apicultural experiments and investigations. This must tend to foster bee-keeping and extend its prosecution all over the Dominion. Mr. Pettit, Chief Apiarist, is a bee-keeper by heredity. The New Zealand Department of Agriculture has for some time had a model apiary in existence under the charge of Mr. Isaac Hopkins, the grand old man of apiculture in those far-away islands. The apiaries are open during working hours to all persons desiring tuition, and cadets are received at the State apiaries to undergo a regular course of instruction, followed by the issue of a certificate to the deserving ones. They have a model Apiaries Act for the suppression of foul brood, and issue bulletins on the subject, showing the best way to start, and the most up-to-date means of carrying on the industry to a paying issue. Mr. Hopkins has now retired from the service of the Department, but his works will long live, and I doubt not bear good fruit. The high position attained by bee-keeping in New Zealand deserves early attention and fuller treatment.

Pessimism.—Recently, being in the company of one of our prominent bee-keepers and contributors, I, Cassandra-like, discoursed a good deal on the past bad season, lamenting that many bee-keepers would be so much discouraged that they would fall out of our ranks. I, indeed, I am afraid, adopted the "Distressed Cottager" vein. My friend listened patiently, or impatiently, until I had said my say, and then, brushing aside my pessimistic sophistries, he launched forth in the brightest and most inspiriting strain on the future prospects of the industry. In a few minutes he showed me clearly that even an average of two or three pounds surplus would cover actual expenditure; that the bees were always there for the bumper crop of the future; that the man who goes under for one bad season is less than a man; that success frequently follows failure; and that history shows that a very good season generally follows a bad one. His reasoning was so convincing that I really felt it was good for me that I had been afflicted. After the lapse of nearly five months I am convinced his optimistic outlook is the true one, for everywhere I learn the fraternity is on the increase.

The Report.—Just a word! If everybody would sensibly consider on how many points all agree, and heartily seek for mutual terms of agreement on the few points of cleavage, a scheme worthy of British bee-keepers should not only be within the region of practical politics, but might be an accomplished fact by the dawn of the active bee-season.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE B.B.K.A. OF THE FUTURE.

[7724.] The hearty thanks of all the associations are undoubtedly due to the gentlemen who have bestowed so much thought and care on the preparation of a project for uniting and strengthening the bee-keeping fraternity. But our gratitude—well deserved though it be—cannot counteract the misgivings with which many of us regard a scheme overloaded with unpractical suggestions. It does not look as if it could have emanated from anyone familiar with the working of local associations: it is clogged with "propolis" and "brace-comb." When these hindrances are cleared away we may be able to get to work. But at the outset we are faced with the drawback that the secretary has no vote on the Council. As Mr. Samways remarks (7713), "the hour and the man have arrived, and . . . the future success or failure of the B.B.K.A. is in the balance." We want a National Union of Bee-keepers (call it B.B.K.A., Royal Apicultural Society, or what you like), with a strong general secretary in touch with all local associations and alive to their needs, and it seems strange that the one who should know most about local peculiarities, prejudices, and requirements, and who, I dare say,

would have the confidence of British bee-keepers, should have no vote on the Council!

The position in the new Union of the proposed "Central Branch" appears somewhat anomalous. Why "Central"? Is there any reason for a special title suggesting, and probably intended to suggest, a special position? If Metropolitan members wish to unite let them form a "London County Branch," to be placed on exactly the same footing as any other county branch, while the financial business proposed to be placed in their hands is relegated, where it of right belongs, to the General Council and its financial officers. It seems to me most unpractical to suggest the formation of two separate and distinct corporations (viz., the "General Council" and the "Central Branch"), each having to conduct financial business with the local associations.

The supplementary recommendation (*c*) bears strong evidence of its framers' lack of experience of local organisation. To anyone who knows the conditions under which new members are procured, and who realises the folly of inventing difficulties, the "standard form of application for membership" will supply "argument for a week, laughter for a month, and a good jest for ever."

No one, Sir, would wish to seem wanting in appreciation of any efforts undertaken for the good of the craft. Still, those who try to do expert work (such as projecting the architecture of a national society), without the necessary expert qualifications, cannot be surprised if their plans are criticised as faulty and inadequate.

The suggestion of Mr. Arthur Schofield (7701) that the annual general meeting be held at the same time and place as the Royal Agricultural Show cannot be too highly praised. Everything declares in favour of its adoption. The desirability of bee-keeping asserting its rightful place as an important agricultural pursuit, the practical advantage to be gained by bringing it prominently before the great yearly concourse of agriculturists, and, lastly, the railway facilities granted in connection therewith—all proclaim the intensely practical nature of his proposal.—WILLIAM MUNRO, Mapperley, Nottingham.

[It is not usual for a salaried secretary to have a vote on the Council, and we do not see clearly what advantage it would be if he had one. A secretary can be of more use to an association without a vote than with one. It is proposed that the B.B.K.A. should give up all its present members and transfer them to a central branch which would be the branch of the B.B.K.A. for London and for all other counties not having branches. One duty of the central branch would be to secure as members all bee-keepers who do not reside within the area of any county association. The General Council would be composed of delegates from the county associations, and would, as we understand it, form the central branch, and we do not think the scheme proposes "the formation of two separate and distinct corporations." The supplementary recommendations are simply suggestions of the committee for the consideration of a General Council, and as it is proposed to be formed by representatives of the different branches they would no doubt on getting together adopt that which they considered workable and reject what was not so.—ED.]

ROSS-SHIRE NOTES.

[7725.] The New Year opened auspiciously here, the sun shining and bees humming while the bee-man hastily reviewed his battalions. As anticipated, the clusters bulked smaller than usual, while a couple of nuclei had perished, leaving ample stores. However, there are a few strong colonies, recognised as such by the warmth of the quilting, and later these will be useful in building up the weaklings to working strength.

Nothing has been done as yet beyond giving extra packing and seeing that stores are ample to last until March is well on the way. The strong stocks can then be reduced to just the number of frames they cover, and a weakling placed alongside with a thin dummy between. The plan of putting weak lots over a strong colony with excluder between has not been invariably successful. Seemingly, this works best with the sectional hive, or a small stock on shallow frames placed above a populous full-depth colony with a sheet of wire-cloth between, which is replaced by queen-excluder after both lots have acquired the same scent.

In clover-heather districts the dual-queen hive can be run as above until clover blooms, then the bee-keeper can remove the shallow story and put on section-racks. This is equivalent to uniting the working force of two colonies, and ensures an immense population of gatherers for the first crop, while the large brood-nest helps to discourage swarming. The removed portion is so depleted of bees that it can neither swarm nor store much surplus, and this allows the queen to rear a large family for the moors.

Just as the precious nectar comes in, super the shallow-frame colony, and unite with it the working force from the parent hive, as this gives a large population of gatherers and little room for brood-nest

storage. It is to be hoped that those who have been working sectional hives at the heather will now let us hear all about their experience through the B.B.J. I have had some correspondence with "Medicus" *re* his improved methods, and think them excellent.—J. M. Ellis, Ussie Valley.

EXCLUDER-ZINC AND ADVANCED BEE-KEEPING.

[7726.] Alas, poor Truth! for thou art too old at twenty, decrepit at forty, and doubtless dead as last year's drones at sixty. "D. M. M." (B.B.J., December 16) is inclined to depreciate Mr. Pringle's views on queen-excluders because they happen to have been written some twenty years ago, and contrasts the said Mr. Pringle's opinions with those of "advanced" American bee-keepers of to-day. But Mr. Pringle *was* an advanced bee-keeper, and had practically all the methods and appliances necessary to skilled honey-production that we have at the present time.

"D. M. M." quotes our Editor's opinion in the "Guide Book" on the use of excluders, or, rather, I should say, he quotes a part of that opinion. I will, therefore, give an even more "up-to-date" quotation from the same author. It occurs on page 460 of B.B.J. for November 18, 1909, and is as follows: "Anything placed between brood-nest and supers impedes work to a certain extent, *but the advantages of using excluder exceed the disadvantages.* You were fortunate in that the queen did not go up into your sections, *but you cannot make sure of her not doing so unless you use an excluder.*" (Italics mine.) That is just what I say. Personally, I do not want a single cell of brood in my supers (comb or extracted), and consider it distinctly bad bee-keeping to allow such, when there is an effectual means of keeping the queen below, in her own proper domain. Excluders below extracting supers are, in my opinion, something more than "a great convenience." They are a means to an end, and that end is the production of the largest quantity of honey of the best quality. It is not merely the contamination of the honey which may be stored in cells which have been occupied by brood, but it is the fact that every slab of brood raised in an upper story in the height of the honey-flow means so much less honey for the bee-keeper. For the brood not only occupies cells to the exclusion of honey for the time being, but we cannot afford to lose sight of the fact that a large amount of honey is consumed in its production. I repeat, the proper place for the queen is the brood-chamber; and the most advanced bee-keeper will take the best of care to keep her there.

As regards "advanced" American bee-keepers, let us look at just a few of their "up-to-date" methods, and see whether the term "progressive" or "retrogressive" better describes them. "D. M. M." mentions Dr. Miller, so I will give a couple of the "Doctor's" advanced ideas. 1. We are told that the Doctor never puts an ounce of paint on his hives from first to last. Now, I can imagine how in a very short time those hives will go into grey-black mourning for their owner's negligence; how every board that *can* warp *will* warp; and how the end-grain of the wood will "check" and split. 2. In the current issue of *Gleanings in Bee-Culture* the Doctor gives his method of "fighting" black brood, in which he not only dispenses with the disinfection of the hives, but—incredible as it may appear—actually places a diseased comb for several days in the hives containing the "turned-out" lots.

Now take one of Mr. Doolittle's little ways. He puts a couple of boards on the ground in the apiary and piles thereon his "reserve" supers of honey, with no other protection than a hive-cover on top; and there they remain from October to the middle of the following June. Mr. Doolittle himself admits that for six months in the year the roads in his neighbourhood are impassable for motor-cars, being either from 3 in. to 1 ft. deep in mud and water, or from 1 ft. to 10 ft. deep in drifted snow. Here, in South-East Essex (the driest corner in England), the roads are available for motors practically all the year round; yet I know well the condition in which I should find combs of honey if exposed in a similar manner. The honey in the unsealed cells would have absorbed so much moisture that it would be running down the combs from top to bottom of the pile, and would probably be fermenting, the pollen would be all mouldy, and the combs generally in an "unfit" condition. Is this "advanced" or "rough (*very* rough) and ready" bee-keeping?

Now consider the late E. L. Pratt's method of increase, which, briefly, consists of shaking the bees from four or five combs of brood on to empty (broodless) combs in a new hive, and giving a young queen as soon as practicable. "Up-to-date," by an "advanced" bee-keeper, you say? Well, between thirty and forty years ago—to wit, in the B.B.J. for March 1, 1876—that very able American lady bee-keeper, Mrs. Tupper, in her admirable "Essay on Bee-keeping," gave a method of increase which was not merely equal to the above, *but considerably in advance of it*, and will undoubtedly produce a stronger stock in less time, and is therefore a more reliable one for wintering or for

a late harvest. By the way, it is not, I think, generally known that it is to Mrs. Tupper that we are indebted for our only classic saying in bee-culture: "Bees do nothing invariably."—SAML. P. SOAL, Rochford, Essex.

[We should like to point out that the climate may make all the difference. The driest corner of England is damp owing to our insular position and a warm Gulf Stream; but it is different on the Continent when one leaves the sea-coast. Even in the mountains of Switzerland bright steel does not rust unless it comes in actual contact with water, and it would be quite possible to keep supers in that country in the manner described without the honey absorbing moisture. Mr. Doolittle's home at Borodino is far enough from the coast to be unaffected by damp. Nor must our roads be compared with those in the States, which are not macadamised like ours, and are simply of earth. They may be described as frequently bottomless mud in winter and bottomless dust in summer.—ED.]

FOUL BROOD LEGISLATION.

[7727.] On page 474 of B.B.J. for December 2 last Mr. G. Thomas says, "Before long bee-keepers will be urging another attempt at a Foul Brood Bill," and this is given as a reason why the B.B.K.A. should be reconstructed, and a very good reason, too, if the B.B.K.A. is going to annihilate this notion.

Let us see what such a proposal amounts to. Before you can make a man legally responsible for a thing the man must have power to prevent that for which he is to be held responsible. For instance, a man is responsible for being drunk because he can prevent it by drinking water instead of wine. But where is the man who can prevent foul brood, when there is not a person who knows how it is caused?

Imagine a respectable bee-keeper, with a few hives as a scientific hobby and to get honey for his own table, while away on his daily employment, having the privacy of his home, his garden, his apiary invaded by a bombastic well-paid Government official, who ransacks every hive and every comb in search of something he himself does not understand. A comb is suspected, it has not been reported, a summons follows; the bee-keeper is so disgusted he does not appear. Next comes the policeman with a warrant, drags him like a felon from his children, and throws him into a prison-cell to await his trial.

If there is one thing belonging to modern bee-keeping which ought to be cried down more than another it is over-manipulation, and yet to satisfy a Foul Brood Bill every frame would have to be hauled out of the hive once a fortnight, or, perhaps, weekly, and even then the bee-keeper's mind would never be at rest, for he would be uncertain whether he had missed a speck or not.

What a pity these people cannot find something better for bee-keeping than the fussy parade of foul brood before the public and House of Commons with a view to placing every bee-keeper under police supervision. I agree with Mr. G. Thomas; it is time for the B.B.K.A. to get into harness, not so much for constructive as for *de*-structive work.—A. GREEN, Notts.

[It is needless to say that we do not fear the dire results anticipated by our correspondent. Legislation has been adopted by most progressive countries where the bee-keeping industry is of commercial importance, and although it has been in force in many countries now for a good many years, we have yet to hear of a single case of trial and imprisonment. Nor have we heard of a single instance of an endeavour to repeal such laws owing to their pressing heavily on bee-keepers; on the contrary, they have enabled bee-keeping to be carried on where formerly it was impossible to do so.—ED.]

BEES NEAR LONDON.

[7728.] In one of my hives I notice a larger collection at the entrance of dead bees than in the other three. It may be that they are all brought forward and left there. I cleared them away with a bent wire, and sent a few out of a batch removed this morning. They have plenty of food, as I fed them up in September last at the proper time.

I notice from time to time in your columns varying reports of last season's honey-yield. From two hives I obtained 48 lb. each of run honey, and another hive gave 23 lb. This was an early swarm, and unexpectedly it swarmed again in July, so I had to put the swarm on the original stand, and removed the old stock to a different location. As you know, the honey-season was of only short duration; in fact, the main source of supply was from the limes, which were in full flower close to my apiary, and the weather held good. I am told by an expert that the honey is of excellent quality. Strangely enough, the 23 lb. was of a paler colour than the other two lots, and does not granulate so quickly. My home is very close to London, being within a quarter of a mile of Hammersmith Bridge. I used the new queen-excluders ("Wilkes") this year, and found the bees came through immediately. They seem superior to the old zinc type.—B.

[The bees appear to have died from natural causes, as we could detect nothing wrong with them.—ED.]

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

Mr. Arthur Pollard, whose apiary we illustrate this week, is the type of bee-keeper who always makes a success of the craft.

No misfortunes at the outset could damp his enthusiasm, and eventually he has become a successful bee-keeper, in spite of being located in a poor honey-district.

It is a distinct advantage when the apiarist can rear his own queens, make hives and appliances, and find a market for his produce at a remunerative price, and Mr. Pollard is able to accomplish all these things.

APIARY OF MR. A. POLLARD, SILSDEN, NEAR KEIGHLEY, YORKS.

His irrepressible spirit of hopefulness should stand him in good stead after the rather depressing result of the last season's work; but no doubt he will prove equal to the occasion, and spring will find our friend ready to take advantage of the good harvest which we all hope will be the reward of our patience during the past two adverse seasons. Mr. Pollard says:—

"I started bee-keeping in the year 1902, having no previous knowledge of bees, with a stock bought in January, which, unfortunately, did not survive the spring. Having got the bee-fever, however, I was not discouraged, and in May I bought another stock, which threw off a 5-lb. swarm in June. I have had many difficulties since then and many disappointments, but have succeeded pretty well, as I now have eight hives, which I hope will come out in the spring stronger than ever I have had them before. They are all headed by 1909 queens, and did some excellent work during last season.

"Only once has foul brood visited my apiary, and I treated it by following instructions given in the 'Guide Book,' and succeeded in stamping out the disease. Indeed, my only instructors have been the 'Guide Book,' the B.B.J., and *Record*, and by adapting the experiences of others to my own requirements I get along very well. I have had several visits from the writer of 'Cappings of Comb,' Mr. L. S. Crawshaw, and consider him one of the first bee-men of the day.

"I breed my own queens from my best stocks, and never allow one to live more than two seasons. During the winter months I make all my own hives and appliances, and, as will be seen in the illustration, I use the 'claustral' chamber, and find that it answers well in this district, as such hives are quickly fastened up ready for taking to the moors. I think I have been the cause of spreading bee-keeping, being always ready to help others with their bees, and I have started a good many in the craft. This district is a very poor one for honey, as there is practically no forage but heather. I average about 30 lb. per hive (the largest 'take' from one hive was 40 lb. in 1906), finding a ready sale for it at 1s. per pound. The boy in the picture is my nephew, who I hope will be a good bee-man some day. Wishing all bee-keepers, and the B.B.J. as well, a record year in 1910."

Queries and Replies.

[3986.] *Will Drone-eggs Produce Queens?*—The other night at a lecture the lecturer said he had taken drone-eggs and placed them in queen-cells, and the bees had reared queens from them. I doubted the point, as "The Honey-Bee" says an egg never fertilised must become a drone, but he stuck to the point, "Bees can rear a QUEEN from a DRONE-EGG." Is every egg in drone-comb a drone-egg? I shall be very glad to see in B.B.J. what you say on the matter, and so subscribe myself, with thanks in anticipation—WILTS C.C.

REPLY.—The lecturer has certainly made a mistake, as a drone-egg, *i.e.*, an egg that has not been fertilised, cannot produce a queen, consequently bees cannot rear queens from drone-eggs placed in queen-cells. On the other hand, if a queen has no worker-comb, and only drone-comb in which to lay, she will, if driven to it, lay worker-eggs in such comb, and they will produce workers. Such cases are rare, but we have seen a colony having only drone-comb in which the queen laid worker-eggs. In this case a swarm was placed on drone-comb, with which every frame was provided, and as there was no worker-comb, the queen after a time began to lay worker-eggs, which produced ordinary workers.

[3987.] *The "Claustral" System.*—I am thinking of going in for the "claustral" system of bee-keeping, and should be very grateful to any reader who would kindly give me full particulars as to its success and advantages.—COURTNEY PAGE, Enfield.

REPLY.—An illustrated article on this by Colonel Walker appeared in B.B.J. for 1905, page 71, and a discussion at a meeting of the B.B.K.A., at which the subject was introduced by the Chairman, was reported on pages 121 and 131 of B.B.J. for the same year. Fuller particulars may be obtained in the book by Abbé Gouttefangeas entitled "Ruche Claustrante et Méthode Claustrale," published by C. Amat, 11, Rue Casette, Paris, VI. (price 3 fr. 50).

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON.

Candy-making (page 495, vol. 37).—I cannot understand the common difficulty in this matter. Years ago I made some experiments, and published the results. If a mixture of sugar and water be boiled to 238 deg. Fahr. and then cooled in the usual way, good candy will result. Just give an excess of water, and allow it to boil away to the desired temperature, and there you are!

Lump Sugar for Winter (page 495).—Without actual trial, I should imagine that this method would be more rather than less trouble than the candy method. Presumably the hive would require periodic opening to moisten the sugar, and one might easily water the bees below. At any rate, would it not be better to use the sugar thus in the form of loaf rather than cube? I do not find candy-making disagreeable, and if a thermometer be used the result should not be uncertain. Mr. Reid's candy-box with perforated bottom would, of course, admit the bees through the perforations, although this might not be essential with cubes of sugar. Probably such a cover would be necessary to confine the bees when watering the sugar.

Election of Council (page 496, vol. 37).—If the method of election is in any way unsatisfactory to provincial members, it would be well to know it now, and it is to be hoped that whilst the matter is under discussion those who have anything to say will say it with due regard to brevity, for all our sakes, as well as to save our Editor from the never-to-be-forgiven sin of boiling down! For myself, I see no sense in electing members who cannot attend meetings; and as for taking the mountain to Mahomet, that is, to say the least, an unbusinesslike removal. Put into English, it means that a number of members must travel to save the few a journey. I may not have got Mahomet's address correctly, but I believe that he lives in the provinces, and I do not see how a monthly business meeting could go touring. But, in any case, is there any obstacle to determination of election, or any other important issue, by postal ballot? The cost would be less than the railway expenditure and the representation far greater.

Queen's Weather (page 498, vol. 37).—Mr. Sladen makes some striking deductions in favour of restricted-mating weather. Would it be practicable to produce this effect by confinement? That is to say, delay the flights, "claustral" fashion, until the parties were eager to face the hour or the conditions. I believe that something of the kind has been attempted by "cellaring" the hives, but with what definite result I do not remember to have seen stated. The deduction as to drone maturity is interesting. Does this mean that, in Mr. Sladen's opinion, the period of immaturity is longer than usually supposed, or that the first of his drones were only hatched late in June?

Warm Section-racks (page 505, vol. 37).—"G. S. N." appears to have devoted some thought to the construction of these. I believe that his double-walled rack is sound, and that the extra expense is jus-

tified. I do not think that the pseudo-economy of light hive-furniture is more than apparent at the time of purchase, but that afterwards the heavier fixtures have a decided advantage. There is no economy in paying for thin hives, year after year, in a reduced honey-yield and unfinished sections, due to the need of a larger force of enveloping bees.

Plurality of Queens (page 511, vol. 37).—This does not quite coincide with the Alexander conclusions, described by Mr. Cowan (page 311, 1908), although it confirms the latter's opinion as to separate clusters. But two queens in a large or double hive is a very different proposition from Mr. Alexander's accomplishment of half a dozen queens in an ordinary hive. In this case it is difficult to realise separate brood-nests, consisting of perhaps one much-travelled comb apiece.

Granulation of Honey-dew (page 513, vol. 37).—I can confirm this, and the specimens I have are, I believe, quite, quite pure.

PRESS CUTTINGS.

"A BEE IN HIS BONNET."

"D. M. M." sends the following amusing cutting from a Scottish paper, which is very appropriate at the present time:—

A heckler questioning Mr. Macdonald-Henderson, M.P. for West Aberdeenshire, suggested a tax on honey.

Mr. Smythe said: Why not put a tax on honey? Bee-keepers pay no rent for their bee-hives and bees, which stole from the farmer's clover—(laughter)—and the landlord's heather in the hills. (Loud laughter.) Some of these bee-hives produced a nice amount of income; and, what is more, honey is a luxury. (Laughter and applause.)

Mr. Henderson: I confess I have never thought of such a thing. (Laughter.) I did not know that bees were the awful thieves that you make them out to be. (Laughter.)

Mr. Smythe: If the honey were left on trees where they all could get the honey if they desired it, matters would be different. (Laughter.)

Mr. Henderson: I would not care to go up a tree after the bees for honey. (Loud laughter.) I will mention the matter, however, to the Chancellor of the Exchequer, who, very likely, will think I have a bee in my bonnet. (Loud laughter.)

HARVESTING IN JANUARY IN ABERDEENSHIRE.

We have received the following from Mr. D. Hunter, of Abington, as an interesting item for bee-keepers in the South:—

Mr. John Shand, Easter Mosshead, Garthy, Aberdeenshire, on Tuesday, Jan. 11, took a full race of supers off a bar-frame hive of bees. Further down the parish, on one farm four scythes were reaping oats, and three carts were leading. On another farm in the Glenfondland district, Drumblade, reaping of oats was being prosecuted yesterday. The weather was remarkably fine, and the conditions better than for the most part towards the close of the year, but the crop is greatly deteriorated as a rule, although reported in one case to be fair.—*Scotsman.*

WEATHER REPORT.

WESTBOURNE, SUSSEX.

December, 1909.

Rainfall, 5·08 in.	Minimum temperature, 20° on 21st.
Above average, 2·26 in.	Minimum on grass, 15° on 21st.
Heaviest fall, 1·27 in. on 21st.	Frosty nights, 15.
Rain fell on 25 days.	Mean maximum, 45·1.
Sunshine, 54·4 hours.	Mean minimum, 34.
Below average, 2·1 hours.	Mean temperature, 39·6.
Brightest day, 29th, 5·8 hours.	Above average, ·4.
Sunless days, 12.	Maximum barometer, 30·389 on 30th.
Maximum temperature, 53° on 2nd.	Minimum barometer, 29·704 on 4th.

L. B. BIRKETT.

DECEMBER RAINFALL.

Total fall, 6.60 in.

Above average, 2.72 in.

Heaviest fall in 24 hours, 1.04 in. on 21st from snow.

Rain fell on 27 days.

W. HEAD, Brilley, Herefordshire.

WEATHER REPORT

FOR THE YEAR 1909.

WESTBOURNE, SUSSEX.

Rainfall, 36·90 in.	Maximum temperature, 82° on Aug. 12 and 13.
Above average, 7·68 in.	Minimum temperature, 11° on March 3.
Heaviest fall, 1·67 in. on Oct. 28.	Minimum on grass, 7° on March 3.
Rain fell on 188 days.	Frosty nights, 83.
Above average, 12 days.	Above average, 12.
Sunshine, 1,851·9 hours.	Mean temperature, 47·6.
Above average, 17·4 hours.	Below average, 1·3.
Brightest days, May 19 and 30, 14·3 hours.	Maximum barometer, 30·706 on Jan. 4.
Sunless days, 54.	Minimum barometer, 28·704 on Dec. 4.
Below average, 6 days.	

L. B. BIRKETT.

RAINFALL FOR 1909.

Total fall, 32.44 in.

Below average, 1.42 in.

Rain fell on 193 days.

W. HEAD, Brilley, Herefordshire.

TRADE CATALOGUES RECEIVED.

MRS. SEADON (*The S. J. Baldwin Apiary, Bromley*).—Detailed catalogue of bee-hives and appliances supplied by the old-established firm of S. J. Baldwin, whose successor is Mrs. Seadon. It includes the "New Pattern Hive," with reversible floorboard, which may be had separately with stand, making it adaptable to any hive. The catalogue is greatly improved on previous issues by having a full list of up-to-date appliances included in it. Catalogue free on application.

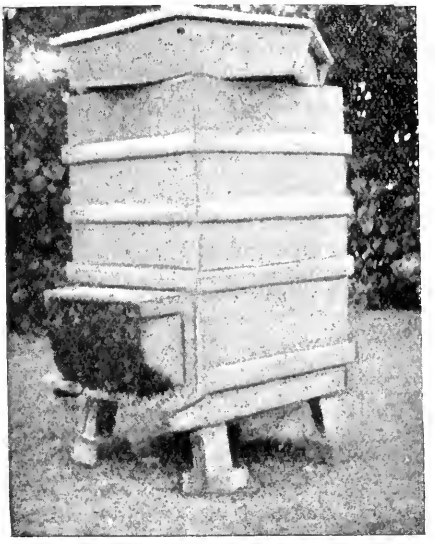
ARTHUR H. WILKES (*Four Oaks, Birmingham*).—This is a list of novelties, the outcome of thought and patient experimenting. They consist of the "'Free-way' Queen-Excluder" and several other appliances made on the same principle. Amongst these is a frame-divider for ensuring a flat surface to combs in shallow frames, a queen and drone excluder sieve for driving, section separator, &c., all of which will no doubt be tried during the coming season. List on application.

A. W. GAMAGE, LTD. (*Holborn, London, E.C.*).—This is a new firm entering the lists, and the catalogue before us contains a full list of appliances for amateur and professional bee-keepers. The latest inventions are illustrated and described. Catalogue free by post.

Notices to Correspondents.

JACK (Cardiff).—*Unsuccessful Bee-keeping.*—It is possible that the want of success is due to improper management, for there is no reason why your father should not succeed with wooden hives, just as hundreds of others have done. You do not say what wooden hives he uses, but from the fact that he has been advised to burn them we conclude that they are old, insalutary ones. If such be the case, it would account for the bees showing signs of deterioration and ultimately dying. Cleanliness and sanitary hives, together with proper management, are of the greatest importance. If you will state what sort of hives are used, and describe their condition, we may be able to advise you further, and there need be no occasion to return to straw hives if instructions in "Guide Book" are carefully carried out.

C. W. (Shepperton).—*Prevention of Swarming.*—1. The "Brice" appliance is fitted to the front of the hive, as shown in illustration, and also on pages 22 and 23 of "Guide Book." On the inside and at a level terminating the slope of excluder-zinc a floor is fixed, above which is a chamber the length of the hive-front, fitted with three frames with foundation. In the floor a passage is cut, to allow entrance of swarm into upper chamber (see "Guide Book," Fig. 9, page 22). When the swarm issues, then returns, and is retained, together with queen, in the receptacle prepared for it, the swarm should be removed and hived. On the other hand, if the swarm is not wanted, the hive is opened, queen-cells removed, and the swarm with the old queen allowed to re-enter the hive. The main point in the appliance is securing the queen, and thus preventing the loss of swarm in the absence of the owner. 2. If the bees are in a healthy condition, there is no reason why they should not be strong enough to return to their hives. It may be that they are suffering from dysentery, or one of the other diseases



"BRICE" SWARM-CATCHER IN USE.

described in "Guide Book," and which are usually attributable to bad food and fermentation caused by it.

G. E. B. (Manchester).—*Brood-rearing.*—1. Your driven bees have evidently been rearing brood for some time, and are doing so now. The nymph thrown out has probably become chilled owing to contraction of the cluster during a cold spell. You should not have given the bees flour-candy at this time of the year, as it is too stimulating for them. They could get sufficient pollen for their requirements in the autumn, and should have had enough stored to start breeding. 2. The reason why the bees go to the scullery drain for water is because it is warm. If you supply them with clean warm water they will take it. A

suitable water-heater is illustrated on page 137 of B.B.J. for 1909.

BEGINNER (Nelson).—*Dead Bees.*—1. The bees sent are mostly old ones, and appear to have died of hunger. Probably the colony was not strong enough when you prepared it for winter, otherwise there is no reason why the bees should not have done well. 2. The best time to start is by the purchase of a swarm, as early in May as possible, from a hive which was known to have swarmed the previous season. 3. British bees will suit your district, and can be obtained from advertisers in the B.B.J. at the proper time.

G. S. L. (Romford).—*Beginning Bee-keeping.*—1. You should first get the "Guide Book" and study it. In it you will find all that is required to enable you to manage bees and to become a successful bee-keeper. 2. The two hives of bees you have had given you should have been properly fed up in the autumn, and ought not to require feeding now. If there is any doubt about supply of provisions they should have a cake of candy placed over the frames on a fine day, disturbing the bees as little as possible. 3. It is quite right for bees to come out on a fine day in winter.

A. B. (Herts).—*Dead Bees.*—The dead bees sent were wet and in a putrid condition, so it is impossible to diagnose them. If you can send a few live bees that you find crawling on the hives, we might be able to detect if anything is wrong with them.

B. B. (Minster).—*Making Thin Syrup.*—If this is made according to instructions in "Guide Book," put into bottles, and well corked, it will keep until wanted.

I. W. E. (Cobham).—*Dead Bees.*—The bees are clustered in the middle of the empty comb with their heads in the cells, showing that they have died from starvation.

E. A. C. (Boscombe).—*Honey Fermenting.*—1. Fermenting honey is not fit for use, and should not be given to bees. It may be improved by boiling, but the acidity cannot be eliminated. It can, however, be used for making vinegar. 2. The "Guide Book" will give all the information necessary for successful bee-keeping. 3. The district between Penzance and Land's End is very exposed, but if you can get shelter for the hives from the prevailing winds, there is no reason why bees should not succeed there.

C. C.; C. G. R.; J. E. S. (Cheltenham).—*Source of Honey.*—The honey you send has been gathered principally from clover, although there are other pollens present, such as lucerne, cucumber or melon, and malvastrum. All these may occur in English honey, and there is no distinctive pollen that would enable one to pronounce with certainty that the honey was foreign. It is frequently quite easy to distinguish foreign honey when it contains pollen in abundance from plants not grown in this country. The presumption, however, is that the sample is foreign, as the flavour differs from English clover honey, which also cannot be supplied at a profit at the price quoted, especially during such a season as the last. Prosecution would be useless, unless you can find out where the honey comes from, and can show it is not what it is represented to be.

J. G. (Barnt Green).—*Black and Yellow Bees in Same Hive.*—We would suggest either that there may be two queens, or that a black queen had mated with a yellow drone. There was time for the bees to rear a new queen, and for her to be fertilised after you had killed the old one.

G. T. (Clitheroe).—*Uncapping Combs.*—They would be more satisfactory if cut level, otherwise you would have to put the frames in the position and order in which they were before.

H. L. (Clyffe).—*Bees Found Dead.*—The bees appear to have died of starvation, but we should know something of the circumstances and condition of the stock to properly diagnose the case.

A. SHAW (Lancs).—*Suitable Locality for Bees.*—Both Lancashire and Cheshire are good counties for bee-keeping, taking them as a whole; but the hon. secretary of the Lancs B.K.A., Mr. J. Bold, Almonds Green, West Derby, or Mr. R. Linnell, hon. secretary Cheshire B.K.A., Grosvenor Chambers, Chester, could inform you of the most suitable districts in their respective counties, if applied to.

W. H. S. (Essex).—*Board of Agriculture Appointment.*—No appointment has, to our knowledge, been made by the Board of Agriculture for such a purpose. Your informant must have been mistaken; we know the gentleman in question is studying the subject unofficially.

Honey Sample.

H. H. (Tunbridge Wells).—Sample is honey of very inferior quality. We should consider it not saleable, the flavour and aroma being very rank and unpleasant.

Suspected Comb.

BEEDOM (Peterboro').—The comb is affected with black brood, and you did right in advising destruction of the combs, frames, &c., and disinfection of hive. Thank you for your good wishes.

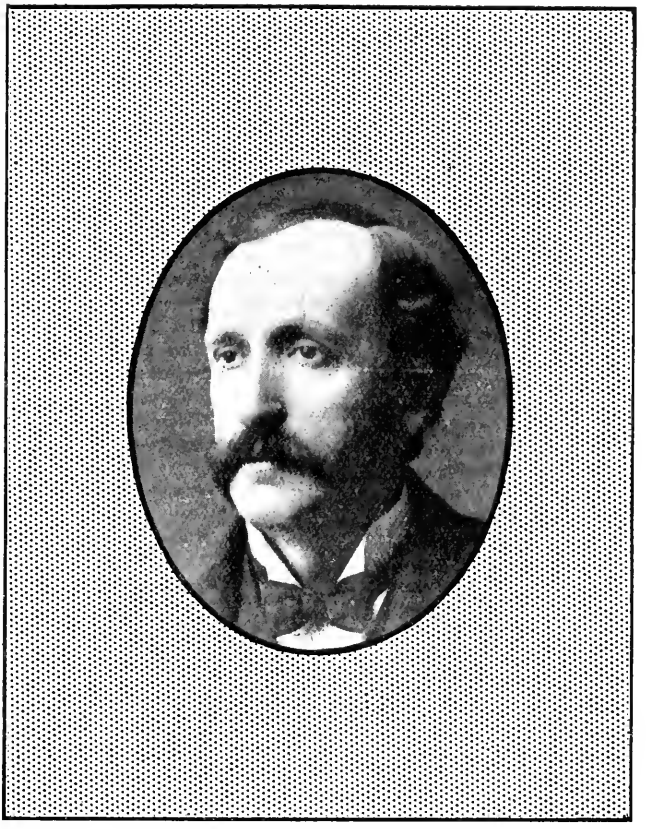
Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. W. Z. HUTCHINSON.

Amongst bee-keepers who stand in the front rank in America is Mr. W. Z. Hutchinson, of Flint, Michigan, whose portrait we have much pleasure in presenting to our readers.

Mr. Hutchinson was born in Orleans County, N.Y., on February 17, 1851, and migrated with his family to Michigan. His natural bent was towards machinery, soon became interested in bees, read all he could about them, and visited bee-keepers to get more information. The introduction of woollen factories caused him to give up the spinning-wheel trade, and one day, when he had sold his last lot to a farmer sixteen miles away from home, he asked to be allowed to stay the night, as he saw a long row of brightly-painted hives with which he wished to become better acquainted. Mr. Clark Simpson, his host on this occasion, had an only daughter, who subsequently became the wife of Mr. Hutchinson. In 1877 he began bee-keeping with four colo-



MR. W. Z. HUTCHINSON, EDITOR "BEE-KEEPERS' REVIEW."

and this he put to practical use by making a turning-lathe and beginning the manufacture of spinning wheels and reels, and peddling them out in the surrounding country. At eighteen years of age he began teaching in school during the winter, and while doing so came across King's "Text Book," which opened his eyes respecting bee-keeping. He found the owner of the book had about fifty colonies of bees, which he asked to see, and for the first time made the acquaintance of a movable-comb hive. He very nies and a good theoretical knowledge of the business. By diligence and perseverance he has been able to make a comfortable living by the sale of comb honey. In 1887 he moved from Rogersville to Flint in Michigan, and in 1888 he started the *Bee-keepers' Review*, a journal edited with considerable ability, and which fills a place not previously occupied. Its distinctive features were those of reviewing current apicultural literature, and gathering together from every source the best that was known upon any

given apicultural subject, and endeavouring to advance bee-culture by increasing the prosperity of existing bee-keepers rather than by adding to their number. In 1887 Mr. Hutchinson published a small book on "The Production of Comb Honey," and in 1891 he brought out "Advanced Bee-Culture," which has since then passed through several editions, and has been enlarged to 230 pages. When writing to him some time ago, we asked Mr. Hutchinson for a few particulars about his life, and his reply is so characteristic that we give it as written. He says:—

"Fifty-eight years ago I opened my eyes upon this world in Western New York. Four years later father, mother, and I migrated to Michigan, then mostly covered with magnificent forests. Father had to cut a road some distance through the woods to reach the log cabin that he had built. It was here that I grew to manhood, saw the forests recede and give place to cultivated fields, log-houses give place to more comfortable modern homes, ox-teams supplanted by horses, and, still later, the iron horse was given a warm welcome.

"Those were happy days—hunting, fishing, trapping, gathering wild nuts and berries, and attending district school. I think that the one thing lacking was reading matter; I often think if I could only have had a tithe of the flood of literature that now pours into my doors what a blessing it would have been. It was my ambition to at least graduate from a high school, but the district school, with a few months at the Flint high school, was the extent of my book education. Poor health, lack of means, and the need for my services at home prevented further schooling. It is possible that this lack of a liberal education has not lessened my usefulness, but it has always been a matter of regret that I could not, by study at school, have perfected myself to a greater extent in the use of language.

"As I approached manhood the choice of a profession or business caused much anxious thought. So many different things—music, literature, and mechanics—all appealed to me that it was difficult to decide. I think now that it was the poetical or romantic side of bee-keeping that was the final factor in deciding me to adopt the profession that I have followed and loved nearly all my life. Thirty-eight years ago I decided that apiculture should be my life work; and, while it is a profession in which few become wealthy, it has furnished me with a comfortable living, and satisfied my hopes, desires, and ambitions.

"As you perhaps know, more than half of my apicultural life has been spent as editor of the *Bee-keepers' Review*, in the publication of which my greatest desire is to be of real help to bee-keepers, to aid them in making of bee-keeping a more safe, pleasant, and profitable pursuit. As I understand it, bee-keeping in this country is conducted somewhat differently from what it is in yours. Here there is a tendency to make a speciality of the business, even to give up everything else, and engage in it exclusively. With the conditions that we have here it is possible to make a much greater financial success by engaging in the business exclusively, branching out and establishing outapiaries, and even employing help in the busy season. A leading feature of the *Review* is to encourage and bring about the adoption of this style of bee-keeping. As you may know, a brother and myself have for several years been engaged in this kind of bee-keeping, one inducement for my taking it up being that we could thereby show by actual example what could be done in that line.

"For all who are working for the good of bee-keepers I have the warmest feelings of friendship, and if you, brother Cowan, every cross this continent again, try to come my way and allow me the pleasure of grasping your hand.—Fraternally yours, W. Z. HUTCHINSON."

Mr. Hutchinson has recently built himself a pretty home, where he hopes to spend the evening of his life, and where we trust, surrounded by his family, he may long enjoy health and prosperity.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, January 20, 1910, at 8, Henrietta Street, Covent Garden, when Mr. W. F. Reid (Vice-Chairman) presided. There were also present Miss M. Gayton, Miss K. M. Hall, Mr. J. B. Lamb, Mr. C. L. M. Eales, Mr. T. Bevan, Mr. A. G. Pugh, Mr. E. Walker, Mr. E. D. Till, Mr. G. H. Skevington, Mr. H. Jonas, Mr. O. R. Frankenstein. County representatives: Mrs. E. Chapman (Essex), Miss E. Scott-Walker (Bucks), Major A. W. Fair (Middlesex), Mr. F. B. White, Mr. W. E. Hamlin (Surrey), Mr. E. R. Stoneham, Mr. V. Eric Shaw (Crayford), Mr. G. Hayes (Notts), Mr. A. W. Salmon (Suffolk), and Mr. W. Herrod (acting secretary).

Letters expressing regret at inability to attend were received from Mr. T. W. Cowan, Mr. R. T. Andrews, Colonel H. J. O. Walker, Mr. A. Richards, Rev. H. R. N. Ellison, Mr. T. E. Hancox, Mr. J. P. Phillips, Dr. Elliott, Mr. F. H. Taylor, Mr. J. N. Bold, and Mr. H. Edwards.

The minutes of the Council meeting held December 16, 1909, were read and confirmed.

The following new members were elected: Mr. A. Easton, Bankwood, Charing, Kent; Mr. Henry Brice, 88, Brigstock Road, Thornton Heath, Surrey; Mr. D. M. Macdonald, Schoolhouse, Morinsh, Ballindalloch, N.B.; Mrs. Lawrence, Copylthorn House, Cadnam, Southampton; Mr. L. E. Snelgrove, "Rockville," Albert Quadrant, Weston-super-Mare.

The report of the Finance Committee was presented by Mr. J. B. Lamb, who stated that owing to lack of books yet to be obtained it was impossible to check the accounts, and proposed that the Finance Committee hold a special meeting later to put the accounts in proper order, so that Mr. Herrod may have a clear start. This was agreed to. Cheques were drawn for £4 14s. 6d. for rent of 12, Hanover Square to December 31, 1909, and £20 for Mr. Herrod on account of expenses.

The report of the sub-committee on office accommodation was presented by Mr. Eales. It was proposed by Mr. Hayes, seconded by Mr. Eales, and carried, that the Chairman's generous offer of temporary office accommodation at 8, Henrietta Street, Covent Garden, be accepted, and that Council meetings and Conversaziones only be held at 11, Chandos Street, Cavendish Square, W.

It was moved by Mr. Lamb, seconded by Mr. Reid, that the Council desire to assure Mr. Cowan that they appreciate fully the innumerable acts of kindness which he has shown to the British Bee-keepers' Association, in the welfare of which he is known to be so deeply interested.

Mr. W. Herrod having retired, the Council discussed the question of the appointment of a Secretary in the place of Mr. E. H. Young, resigned. After letters had been read from Mr. Cowan, Dr. Elliott, Messrs. T. E. Hancox and J. Phillips, and the Honorary Treasurer and Secretary of the Lancashire Bee-keepers' Association, all advocating the appointment of Mr. W. Herrod, it was moved by Mr. J. B. Lamb, seconded by Mr. C. L. M. Eales, and resolved unanimously:

"That Mr. Wm. Herrod be appointed Secretary of the British Bee-keepers' Association in place of Mr. E. H. Young, resigned, at a salary of £60 a year, subject to the usual rule of three months' notice on either side, his present position of Expert to the Association to be retained."

Mr. Eales and Mr. Lamb were appointed a sub-committee to prepare the agreement to be signed by Mr. Herrod.

Mr. Herrod attended the meeting, and was congratulated by the Chairman on his appointment as Secretary. In thanking the Council, Mr. Herrod assured them that he would do his very best for the Association, and that their confidence in him would not prove to have been misplaced.

Owing to the large amount of work in hand, it was resolved to leave the arrangement of the Insurance Scheme for 1910 to the next meeting.

The question of sending out a leaflet, entitled "A Simple Explanation of the Proposal to Reorganise the British Bee-keepers' Association," and voting cards to individual bee-keepers was then fully discussed, and it was resolved: "That whilst this Council appreciates Mr. Garcke's generous offer to send out a further circular, we are of opinion that the resolution passed at our last meeting should be adhered to, and no fresh circular be distributed at present."

It was resolved to ask the Chairman to communicate with the bank, informing them that Mr. Herrod had been appointed Secretary to the Association.

A letter was read from the Secretary of the Shire Horse Society agreeing to relieve the Association of all further liability for rent upon payment of same up to December 31, 1909.

The next meeting of the Council will be held on February 17.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

TALES FROM ARISTOTLE.

[7729.] My acknowledgments to Mr. Green for the courteous references he makes to my last letter, and for his intimation as to where I may find traces of a generation advanced in bee-culture. But no one expects instruction from the tales retold of the era

> When Music, heavenly maid, was young,
> While yet in early Greece she sung.

They ante-date by 200 years the reign of Ptolemy and are only a record of the craft as it was at that particular period. I thought it might interest to turn back the pages of history for 2,000 years in order to peruse the "Grecian bee-keepers' guide book" of those days. Personally, too, I have experienced much pleasure in renewing my school-day acquaintance with my old Greek Lexicon.

As to the fiction that the larvæ bred in decaying flesh turn into bees, which Mr. Green alludes to, this is none of Aristotle's

yarns. Wise men of those days knew not how to account for the generation of bees. The correct solution of the enigma was impossible to them, because in their pride they had cut the ground from beneath their feet. Those large bees, they said, which we see the other bees follow, must be males. Who ever heard of a female capable of government? Wherefore they called them "reges et duces," kings and leaders, βασιλοι, and one complication led to another. First, it is only too evident that the bee has a sting, and so has the "king," although seldom used. Now, as Aristotle quaintly words it: "Weapons for the exercise of bravery are given to no females"—proof positive that the bees and kings were males. He might have added that females were quite able to take care of themselves. Secondly, a further proof that both bees and drones were of the same sex was that, seeing the great number of both in one hive, the act of intercourse must have been frequently noticed, as in flies, if the contrary had been the case. Yet, arguing from the same premises, the drones, having no stings, might be females. But this, too, could not be, because the drones were never noticed to feed the young and attend to them, which is the province of females. They collected no honey and were idle. I quote again from Aristotle: "The drones are lazy, and have no weapon by which they can struggle for food," and yet, having given the kings governing power, they add to it a parental power, for he goes on to say: "It is agreed among all bees to follow their king (for, unless it were so, they would lose all claim to be governed), and as they concede that kings as parents do no work, they chastise the drones as sons, for it is most just that sons should be chastised if they do no work."

Now, having got into this delightful quandary, and having almost established the fact that the home exists without a mother, how is the difficulty to be surmounted? For it is patent that there is brood in the hive in due season. Well, one theory is that of the fishes. Repeating my previous remark that the fertilisation and generation of fishes had never been studied sufficiently by the ancients, it was seriously propounded that fishes generated within themselves their progeny, and they confirmed the possibility by reference to the vegetable kingdom, where male and female, they maintained, were to be found in the same plant. But Aristotle seems to have had his "doots," for he says if this is possible in bees, why not in other animals? They had also another theory, that the brood was brought from plants and flowers, especially the olives—"An abundance of olives is simultaneous with an abundance of swarms" are his words—but here again he is an agnostic. "If they are brought from there," he asks, "who put them there?"

But as I think I have trespassed enough on the JOURNAL for the present, I must postpone the reply to this query until my next letter.—J. SMALLWOOD, Hendon.

THE SEASON OF 1909.

BAD-TEMPERED BEES.

[7730.] Owing to my being called away from England suddenly in September, I was unable to finish the winter feeding of my hives. Two stocks developed dysentery. One I have cured by feeding on candy, and it is strong and healthy again; the other was too far gone. There are eight combs in this hive, partly full of sealed honey and partly of unsealed stores. I propose extracting to clear this latter out, spraying with No. 8 solution (page 197 of "Guide Book"), and using them in the spring when bees commence to fly freely. Is this safe, or would it be better to extract completely? I can find nothing in "Guide Book," so seek your advice or page in book if I have overlooked it. [It would be quite safe if it is ordinary dysentery, but if of the virulent type it would be best to extract all the honey and disinfect the combs the way you suggest.—ED.]

The year 1909, as everywhere else, was not good in Twickenham, but I got some twenty sections from each of five hives. It was good, clear blossom honey. I ceased supering in July owing to bad weather. The bees have plenty of stores. I do not, however, trust to the quality after above experience with dysentery, and am feeding with soft candy. I am the son of your old correspondent Mr. Zehetmayr, and was his assistant in bee-keeping from my tenth year, and my present hives are descendants of his original stocks. One has a half-bred queen (Italian-English), two are Italian queens, one an English black queen. The half-breeds are by far the best of my honey-gatherers, but brutes for stinging. The stock has been in existence for eight years, having been re-queened every second year from itself, the progeny of one queen being slightly more yellow, and the next perhaps blacker, according, I suppose, to the drone. One thing is certain, the temper of the hive has been bad from the time it was started with the half-breed. I am sure the drone was from a certain hive. This seems to be conclusive evidence of the temper of the bees coming from the queen, which was originally black. Another curious fact is that it has from the beginning, and in spite of the changes of queens, shown a decided

tendency against swarming, although I treat all hives alike, and so long as they are not diseased I take the same measures against swarming with all of them. This hive has only swarmed twice in eight years, while the other hives have generally managed to swarm once a year. I have had one bout with foul brood, and have been able to get rid of it; but I shall be very careful this spring, so that it may not appear through my overlooking some piece of apparatus which may have escaped the boiling water and soda and the Calvert's No. 5, and where the germs may be lurking.—WALTER ED. ZEHETMAYR, Twickenham.

ANCIENT EGYPTIAN BEE-KEEPING.

[7731.] In reply to Colonel Walker (page 16), I may say that the evidence regarding Egyptian apiculture is somewhat fragmentary, and no work on ancient Egypt deals largely with the subject. However, it seems clear that the Egyptians were large consumers of honey, and that wax was much used. Egypt, not being a well-wooded country, and its woods chiefly hard, would not be favourable for wild bees on a large scale. To show our methods are *not* modern, Varro, in the last century before Christ, advised that hives should be made of wood, basket-work, &c., and that they should be contractible to suit size of the swarm. He also recommends a pane of glass (*lapes speculares*), transparent stone, to enable the bee-keeper to see his bees at work. Now, if our worthy Editor could have found Varro's original writing and put it in B.B.J., would anyone have detected that it was anything but a modern production? I ask, How far have we got beyond Varro? Practically we are beginning where he left off. How is it possible for a man to be writing about just the very things we are using ourselves, 2,000 years later, without bee-keeping at that time being in an advanced state if we ourselves are in that condition? Sallust recommends cork for hives. Why, if Sallust lived today he would probably be the best hive-maker in the world. (See "American Mechanics," by Knight.) If Colonel Walker will trace the observatory-hive to its origin and then back again, he will find that every time it is seen in a new country, or even district, it is looked upon as being something new. Pepys, in his "Diary," refers in 1665 to a glass hive thus: "After dinner to Mr. Evelyn's, he being abroad, we walked in his garden, and a lovely noble ground he hath indeed, and among other rarities a hive of bees so as being hived in glass you may see the bees making their honey and combs mighty pleasantly." I am sorry I cannot remember names of books in which references have been made to ancient bee-keeping but the one alluded to by Knight. However, Varro's advice shows that our present methods are 2,000 years old—I mean our best methods, for no Egyptian would be silly enough to use the sulphur pit.—A. GREEN, Notts.

[The hive described by Varro was a round or square horizontal one in which the front and back walls could slide inside in such a way that they could be pushed forwards or backwards according to requirements. It was round if made of osiers, pottery, or cork, and square when made of fennel stalks. Similar hives are used to this day, and we have in this office a cork hive and one made of fennel stems, which we brought with us from Africa some years ago. These, however, are not observatory-hives, and could not be called such even if they had a pane of glass in them, as they do not carry out the principle of an observatory-hive such as we understand it. With our movable-comb hives, and observatory-hives where both sides of every comb can be seen, we have advanced considerably since the time of Varro, who wrote his "Rerum Rusticum Libri" in his eightieth year (37 B.C.). The hive described by Pepys, and which was given to Evelyn by Dr. Wilkins, of Wadham College, was called by him a "transparent" apiary. From the description it is evident that such hives were simply boxes with glass in the sides, just such as were used until Hüber introduced his leaf observatory-hive in 1789. There is no evidence in Varro's writings to show that he knew anything about our modern methods of bee-keeping, which have nothing in common with those of his time.—ED.]

FOUL-BROOD LEGISLATION.

TO BE OR NOT TO BE'E?

[7732.] From time to time we hear a buzz from those who desire official interference with our industry by means of foul-brood legislation. After keeping bees all my life, I should consider the question of giving them up if it came about. I am quite aware of all the arguments set forth, and I also know from experience that too much is made of them. Some time ago a vote was taken, with the result that the weight of the craft was strongly against these protectionists. It is true that the majority of bee-keepers voted for it, but the minority had by far the larger number of stocks. I have noted that bee-keepers with one or two stocks, and perhaps only one season's bee-keeping experience, tried to dictate to those with large apiaries, who were experienced

hands in the craft. Let them seriously consider what they wish to do. I strongly advocate the liberty of the subject, and will not be told how I am to keep my bees. I hear privately from Canada, where they have legislation, that foul brood is as rampant as ever. Ireland is also giving it a trial, and South Africa is arming herself with the powers to inflict severe penalties on poor erring bee-keepers; therefore let us see if they can keep clear of disease. As a lover of bees, I would do anything for their welfare. I have, and intend, to go out of my way to help bee-keepers, therefore I again appeal to them to consider well before we encumber ourselves with what we may regret. Like politics, there are two sides to this question, and our worthy Editor is always ready to allow free expression of the opinions of B.B.J. readers. I would suggest the strengthening of the B.B.K.A., which could do all we require without any outside interference. I have stocks here, and have lately again become interested in an apiary in England, so have been tempted to write this in what I consider to be the best interests of the craft, and wish all a right good season.—THOS. J. HORSLEY, Merridale, Douglas.

ABNORMAL CONDITION OF STOCK.

[7733.] Last October I was asked to go to a house in this neighbourhood to examine the bees, take surplus honey, and put them right for the winter. The very first hive I opened presented what seemed to me a problem. It had been supered, but the supers were untouched; when I had removed these and the excluder and examined the frames below, I found the bees very strong and very healthy, but they had not stored one atom of honey. The bees were far too strong for any suggestion of robbing; they had a young queen, and were apparently in perfectly good order in every respect. The weather was at the time very fine for the season of year, which perhaps accounted for their being alive but without apparent means of subsistence. I may add that the other five hives were in every way normal. This stock had been in its present position some eighteen months or two years, and, like its neighbours, consists of a well-known strain of hybrids.—H. G. STANLEY, Cardiff.

BEE-KEEPING IN MINNESOTA.

[7734.] Bee-keeping in the United States generally is both a business and a pastime. While a few apiarists give great attention to their bees, there are many who almost leave them to take care of themselves. In the Northern States nearly all the stocks are wintered in cellars, though a few bee-keepers use chaff and double-walled hives.

Minnesota has long cold winters and usually a short working season; but still there are some three thousand bee-keepers in the State. White clover, basswood, maple, fruit bushes and trees, and some buckwheat are the chief sources of honey-supply, while alfalfa is being introduced in some parts, which will greatly enlarge the pasturage for bees.

The Minnesota State Bee-keeping Society holds an annual meeting, at which papers are read and questions asked and answered. It is intended to be especially helpful to the younger bee-keepers. The last meeting of this society was held in Minneapolis on December 8 and 9 last, when some sixty members were present. Mr. H. V. Poor, State Inspector of Apiaries, gave an address upon "The Curse and Cure of Foul Brood." This was followed by many questions and an earnest discussion.

Some time was also spent considering the best methods of wintering bees, with the general consensus of opinion that for this latitude a cellar that is dry, well ventilated, and kept at a temperature of 40 deg. to 45 deg. Fahr. is the best place to winter them in.

Closely allied to this discussion was the subject of winter stores or the best method of autumn feeding. From the opinions expressed, granulated cane sugar—two parts to one part water—seems to produce a satisfactory food, to be fed rapidly before the weather becomes very cold.

Mr. C. F. Greening, of Grand Meadow, Minn., told how he had practically eliminated natural swarming, and how he secured over 1,200 lb. of extracted honey from nine colonies. He illustrated his address with a miniature hive. He uses a brood-chamber similar in size to that used in the ten-frame "Langstroth" hive. The frames in supers are about half as deep. He is careful to send his colonies into winter quarters in strong condition, and in the spring he stimulates brood-raising by giving frames of honey uncapped, so that by the time of the honey-flow he will have a very strong colony ready to gather it. If there is any sign of swarming he adds more supers, and keeps the bees gathering honey.

Besides this meeting there is an annual exhibit and demonstration of bee-keepers' supplies, honey, and bees at the Minnesota State Fair. This affords the manufacturers an opportunity to exhibit their goods, and the bee-keeper his bees and the finished product, honey.

Many thousand people see these exhibits, and become more interested, so that they return home either to begin bee-keeping or to take better care of the few colonies they already have.

Exhibits of bees are also shown at some

of the county fairs in different parts of Minnesota. Last September I made the first exhibit in this county, which took the form of a one-frame observatory-hive, and many people saw a queen-bee for the first time. I also exhibited a modern bar-frame hive. Many questions were asked, and I secured the names of a great many people in this county who keep bees.

Thus those who are interested try to help each other and to interest others, and there grows up a very fraternal spirit among bee-keepers.—E. EWELL, Waseca, Minn., U.S.A.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Glass Quilts.—"Sheets of glass just the size of the top of the hive are embedded in putty to make an hermetic sealing. Over this is placed a tray of planer shavings. Moisture is never seen directly over the cluster, if it can be seen at all. Bees are always nice, warm, and dry." This seems to run counter to one's preconceived notions. A good deal was written in our JOURNAL some years ago on this subject, and all the opinions coincided with the above.

Flouring Queens.—Messrs. Root's operator gives the following in *Gleanings*:—"I took the virgins one by one, put them in a tin half full of flour, and shut them in. Being active, they flew around, and in less than a minute they were so completely covered with flour that they could not fly. While in this condition I picked them up on the end of a small twig, and ran them in at the entrance. Forty virgins were thus treated, and about 75 per cent. of them successfully introduced. At the same time three laying queens were introduced safely to full colonies by the same plan."

Comb-building in Super.—Recently I advised a trial of this plan, and stated that fine combs could be thus obtained. I notice another contributor says:—"Full sheets should never be drawn out in the brood-chamber under any circumstances, as the super is the place for comb-building, and the only time to build comb is during a full honey-flow."

Rearing Queens.—In the *Review* Mr. M. A. Gill, a 1,200-hive man, votes for buying, and not rearing, queens. "I am convinced when I did so that I lost both honey and money, and I have concluded, after years of experience with buying queens in a wholesale way, that it pays me to buy queens liberally to replace superannuated ones."

Mistakes.—Mr. Hutchinson in reviewing his past concludes that amongst his only mistakes were: Going into queen-rearing instead of honey-production, not beginning early enough to keep more bees, and losing bees in winter through ignorance and neglect. He gives as a frontispiece an illustration of a new house he has built from his bee-profits.

Bulk Comb-honey.—This form of surplus, known in the States as "chunk"-honey, seems to be making considerable headway. Louis Scholl, Texas, advocates its use strenuously, and prophesies that over a wide area it will be the favourite form ere long. "It is the simplest, most satisfactory, surest, and most economical way to produce comb-honey." Mr. Root advises a modified form of this output in the shape of "*individual services* of comb-honey for use in hotels, dining-cars, and restaurants." Both forms will receive further attention at an early date.

No Acid.—At the Ontario Convention "different speakers called attention to the fact that they were supplying firms with wax for use in the arts, and that the special proviso was that it must be guaranteed that no sulphuric acid had been used in rendering it." One bee-keeper condemned the use of nitric acid, "because, although it made the wax look beautiful, yet it was impossible to make it into foundation after the treatment." Its use is recommended in this country when rendering very old combs, but I have in the past dissuaded bee-keepers from the practice, unless when absolutely necessary.

A Sting Cure.—"A few drops of coal oil applied to the part of the body stung will, in most cases, completely cure and remove all bad feelings in a short time, and also the swelling."

Improper Winter Protection. — Professor Surface in *Canadian B.J.* gives the following causes for winter losses:—"If the hives be poor and loose, or too large for the number of bees they contain, or if the walls be thin so that the heat will readily escape and the cold penetrate, or if the hives stand in exposed places, or foolishly be opened after the bees become quiet, or if the bees be improperly protected from cold, or if they are not prepared for wintering at the proper time and season, they are liable to suffer considerably, or even die out."

The National.—The last balloting for officers has had a strange result. Every single officer—president, vice-president, secretary, and directors—is new but one, General Manager France alone being retained. By the way, could not the B.B.K.A. take a hint from the following? These officers reside in parts of the United States so far apart as Texas, Chicago, New York, Dakota, &c. If this can be done with such immense distances be-

tween, why should not even Scotland have representatives on the Council of the British B.K.A.?

A "Model" Foul Brood Bill.—I feel confident that one of the very first acts of the rejuvenated Central Association will be to work strenuously, with a united national body of bee-keepers behind it, for the suppression of bee-diseases all over our island. *Gleanings* (on pages 782-3-4) publishes a model Bill drawn up by Dr. Phillips, which was to be presented at the various State General Assemblies convened during this month. More will be heard of this draft Bill, and perhaps our Editor will print it *in extenso* when it passes through the winnowing and sifting of the Assemblies.

THE LONG NIGHT IN THE HIVE.

BY TICKNER EDWARDES.

There are few things more mystifying to the student of bee-life than the way in which winter is passed in the hive. Probably nineteen out of every twenty people who take a merely theoretical interest in the subject entertain no doubt on the matter. Bees hibernate, they will tell you—pass the winter in a state of torpor just as many other insects, reptiles, and animals have been proved to do. And, though the truth forces itself upon scientific investigators that there is no such thing as hibernation, in the accepted sense of the word, among hive-bees, the perplexing part of the whole question is that, as far as modern observers understand it, the honey-bee ought to hibernate, even if, as a matter of fact, she does not.

For consider what a world of trouble would be saved if, at the coming of winter, the worker-bees merely got together in a compact cluster in their warm nook, with the queen in their midst; and thenceforward slept the long cold months away, until the hot March sun struck into them with the tidings that the willows—first caterers for the year's winged myriads—were in golden flower once more; and there was nothing to do but rouse, and take their fill. It would revolutionise the whole aspect of bee-life, and, to all appearances, vastly for the better. There would be no more need to labour through the summer days, laying up winter stores. Life could become for the honey-bee what it is to most other insects—merry and leisurely. There would be time for dancing in the sunbeams, and long siestas under rose-leaves; and it would be enough if each little worker took home an occasional full honey-sac or two for the babies, instead of wearing out nerve and body in all that desperate toiling to and fro.

Yet, for some inscrutable reason, the honey-bee elects to keep awake—uselessly awake, it seems—throughout the four months or so during which outdoor work is impossible; and to this apparently undesirable, unprofitable end she sacrifices all that makes such a life as hers worth the living from a human point of view.

You can, however, seldom look at wild Nature's ways from the human standpoint without danger of postulating too much, or, worse still, leaving some vital, though invisible, thing out of the argument. And this latter, on a little farther consideration, proves to be what we are now doing. Prolonged study of hive-life in winter will reveal one hitherto unsuspected fact. At this time, far from settling down into a life of sleepy inactivity, the queen-bee seems to develop a restlessness and impatience not to be observed in her at any other season. It is clear that the workers would lie quiet enough if they had only themselves to consider. They collect in a dense mass between the central combs of the hive, the outer members of the company just keeping in touch with the nearest honey-cells. These cells are broached by the furthermost bees, and the food is distributed from tongue to tongue. As the nearest store-cells are emptied, the whole concourse moves on, the compacted crowd of bees thus journeying over the comb at a pace which is steady yet inconceivably slow.

But this policy seems in no way to commend itself to the queen. Whenever you look into the hive, even on the coldest winter's day, she is generally alert and stirring, keeping the worker-bees about her in a constant state of wakefulness and care. Though she has long since ceased to lay, she is always prying about the comb, looking apparently for empty cells wherein to lay eggs, after her summer habit. Night or day, she seems always in this unresting state of mind, and the work of getting their queen through the winter season is evidently a continual source of worry to the members of the colony. Altogether, the most logical inference to be drawn from any prolonged and careful investigation of hive-life in winter is that the queen-bee herself is the main obstacle to any system of hibernation being adopted in the hive. This lying-by for the cold weather, however desirable and practicable it may be for the great army of workers, is obviously dead against the natural instincts of the queen. And since, being awake, she must be incessantly watched and fed and cared for, it follows that the whole colony must wake with her, or at least as many as are necessary to keep her nourished and preserved from

harm. Those, however, who are familiar with the resourceful nature of the honey-bee might expect her to effect an ingenious compromise in these as in all other circumstances; and the facts seem to point to such a compromise. It is not easy to be sure of anything when watching the winter cluster in a hive, for the bees lie so close that inspection becomes at times almost futile. But one thing at least is certain. The brood-combs between which the cluster forms are not merely covered by bees. Into every cell in the comb some bee has crept, head first, and lies there quite motionless. This attitude is also common at other times of the year, and there is little doubt that the tired worker-bees do rest, and probably sleep, thus, whenever an empty cell is available. But now almost the entire range of brood-cells is filled with resting bees, like sailors asleep in the bunks of a forecastle; and it is not unreasonable to suppose that each unit in the cluster alternately watches with the queen, or takes her "watch below" in the comb-cells.

That there should be in this matter of wintering so sharp a divergence between the instincts of the queen-mother and her children is in no way surprising when we recollect how entirely they differ on almost all other points. How this fundamental difference has come about in the course of ages of bee-life is too long a story for these columns; but the fact is pretty generally admitted that, while the little worker-bee is a creature specially evolved to suit a unique environment, the mother-bee remains practically identical with the mother-bees of untold ages back. She retains many of the instincts of the race as it existed under tropic conditions, when there was no alternation of hot and cold seasons; and hence her complete inability to understand, and consequent rebellion against, the needs of modern times.

Whether the worker-bees will ever teach her to conform to the changed conditions is an interesting problem. We know how they have "improved" life in the hive—how a matriarchal system of government has been established there, the duty of motherhood relegated to one in the thirty thousand or so, and how the males are suffered to live only so long as their procreative powers are useful to the community. It is little likely that the omnipotent worker-bee will stop here. Failing the eventual production of a queen-bee who can be put to sleep for the winter, they may devise means of getting rid of her in the same way as they disburden themselves of the drones. In some future age the mother-bee may be ruthlessly slaughtered at the end of each season, another queen being raised when breeding-time again comes round. Then, no doubt, honey-bees would hibernate, as do so many other creatures of the wilds; and the necessity for all that frantic labour throughout the summer days be obviated.

This is by no means so fantastic a notion as it appears. Ingenious as is the worker-bee, there is one thing that the mere man-scientist of to-day could teach her. At present, her system of queen-production is to construct a very large cell, four or five times as large as that in which the common worker is raised. Into this cell, at an early stage in its construction, the old queen is induced to deposit an egg; or the workers themselves may furnish it with an egg previously laid elsewhere; or again—as sometimes happens—the large cell may be erected over the site of an ordinary worker-cell already containing a fertile ovum. This egg in no way differs from that producing the common, undersized, sex-atrophied worker-bee; but by dint of super-feeding on a specially rich diet, and unlimited space wherein to develop, the young grub eventually grows into a queen-bee, with all the queen's extraordinary attributes. A queen may be, and often is, raised by the workers from a grub instead of an egg. The grub is enclosed in, or possibly in some cases transferred to, the queen-cell; and, providing it is not more than three days old, this grub will also become a fully-developed queen-bee.

But, thus far in the history of bee-life, it has been impossible for a hive to requeen itself unless a newly-laid egg, or very young larva, has been available for the purpose. Hibernation without a queen is, therefore, in the present stage of honey-bee wisdom, unattainable, because there would be neither egg nor grub to work from in the spring, when another queen-mother was needed, and the stock must inevitably perish. Here, however, the scientific bee-master could give his colonies an invaluable hint, though greatly to his own disadvantage. In the ordinary heat of the brood-chamber an egg takes about three days to hatch, but it has been ascertained that a sudden fall in temperature will often delay this process. The germ of life in all eggs is notoriously hardy; and it is conceivable that by a system of cold storage, as carefully studied and ingeniously regulated as are most other affairs of the hive, the bees might succeed in preserving eggs throughout the winter in a state of suspended, but not irresuscitable, life. And if ever the honey-bee, in some future age, discovers this possibility, she will infallibly become a true hibernating insect, and join the ranks of the summer lotterers and merry-makers. But the bee-master will get no more honey.—*Pall Mall Gazette.*

Queries and Replies.

[3988.] *Lecturing in Canada.*—I am an old English country bee-keeper, and have settled out here in British Columbia. I find the American system of bee-keeping is the only one practised, and having learnt all there is to be known about it, I keep my opinion that it is not to be compared with our British method of manipulation. We enjoy very long summers here and the climate is favourable for bees, but there does not seem to be anyone except novices in the bee-business, and some have been very successful, so I have no fear of my results. I am an all-Britisher if possible, and shall push the old country appliances as soon as I can fix up my depot and get a good home firm to represent. By profession I am a watchmaker, but out here things are not so finely defined, and it is not unusual to change one's trade. What books would you recommend to one who intends to make bees a leading line as a lecturer, for instance?—E. C. Appleby, Victoria, B.C.

Reply.—As you already have the "Guide Book," other suitable works for study would be "The A B C and X Y Z of Bee-Culture," published by A. I. Root Co., Medina, Ohio; "The Honey-Bee," 2s. 6d., by T. W. Cowan; and "Wax Craft," by T. W. Cowan, 2s. Write to Messrs. Root for list of American works if you intend to lecture on American and British bee-keeping.

Notices to Correspondents.

W. F. T. (Rugby).—*Moving Skep.*—1. If you move your skep in a pony trap you will not require the carrier shown on page 117 of "Guide Book," and the bees may be simply secured in hive by means of the coarse net or cheese-cloth, and the skep carried in an inverted position. You can move it now on a fine day when the bees are able to have a flight on their release. 2. Yes. 3. Yes, if you place them so that the skep is steady. 4. The only way, if you want to keep the skep as a stock, is to allow it to swarm. As you do not wish to do this you should transfer in the way shown on page 150, and as you are a novice at bee-keeping we would advise you to adopt this plan. You cannot transfer the bees and keep the stock as well with advantage. 5. The foundation with cell-bases shaped as you show them is faulty, and the bees could not construct normal worker-comb from it. It is possible that the foundation had stretched and lengthened the impressions. 6. No; paint gives a better body, and dries quicker and harder.

J. C. A. (Grangemouth).—*Dead Bees.*—The bees were much too decomposed to show if they had died from disease. In order to detect disease living specimens should be sent.

G. M. A. (Bardon Mill). — *Plants for Shade.*—As a shrub the snowberry (*Symphoricarpus racemosus*) would be useful for bees. The following perennials will also do in the shade: Anchusa, campanulas, *Corydalis lutea*, myosotis, *Nepeta mussinii*, primroses; and of bulbs the crocus would be the most useful. All these can be obtained of nurserymen or from Messrs. Barr and Sons, King Street, Covent Garden, London.

M. G. B. (Maybury).—*Loss of Stock.*—1. There seem to have been too few bees to keep up the warmth of the hive, and they have consequently died of cold and starvation. The combs show that the hive has been invaded by robbers. 2. No doubt the queen was doing her best to increase the population, and the stimulation of the candy had induced her to do so. 3. Mr. F. B. White, Marden House, Redhill, is the secretary of the Surrey B.K.A. 4. Burn the frames and melt the combs and thoroughly disinfect hives (see page 429 of B.B.J. for October 28, 1909). 5. Your Wyandottes seem very discriminating if they are able to pick out the healthy from the diseased bees.

A. B. W. (Worth).—*Loss of Stock.*—There is nothing the matter with the bees to account for their dying, and the probability is that there were not enough of them to keep up the heat of the cluster. The candy is in a very liquid and messy condition from the damp, and the bees seem saturated with the liquid. You do not say how it is that the bees, wax particles, and cork dust are all mixed up with the candy. The comb contains a little sealed honey at the top and a small cluster of bees, some being head downwards, which shows that they have died from starvation, not being able to reach their food. The bees have also gnawed away the comb in the hope of getting at some stores. There is no reason why the combs should not be used again, except those containing dead brood, which should be destroyed.

P. O. (Lanarkshire).—The comb is badly affected with virulent foul brood. You would most likely infect your other hives if you used the honey for feeding the bees, as it is very difficult to destroy the germs even by boiling, which would have to be for three hours to make sure of killing them. In doing this the honey may be burned, and would also in this way become injurious.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Exhibiting at Shows.—M. U. Gubler, the president of the Société Romande d'Apiculture, gives good advice in the society's journal in recommending bee-keepers to exhibit at the Swiss Agricultural Show to be held in Lausanne in September next, when he hopes the bee-society will be well represented. He says the juries have frequently been ashamed at the poor show made by bee-keepers, in contrast with the fine exhibits of other industries. He says: "One hears it frequently said, 'What is the good of showing? It brings in nothing, and there is all the trouble and the expense,' and it is generally these who afterwards complain that they cannot sell their honey. But he who nowadays wishes to sell must do some advertising, and the best advertisement is showing the public the beauty and goodness of our products. Moreover, we are not simply 'grocers' seeking profit: the ideal bee-keeper aspires to something more noble, for he has the credit of his society at heart, and will do his best to have it properly represented."

Sophora Japonica.—E. van Hay, in recommending this tree in *Rucher Belge*, says he prefers it to all others for bees. It is a magnificent tree, and can attain a height of from 40 ft. to 50 ft. It belongs to the order Leguminosæ, and produces whitish or cream-coloured terminal panicles of flowers in August and September. As a nectar-producing plant it is much visited by bees, the honey being yellow and of a particular flavour. It should be planted along the sides of roads, and yields an abundant harvest at a time when honey-plants are becoming scarce. This tree is not fastidious as to soil, and will grow in damp places as well as in very dry ones, but it is difficult to transplant and is sometimes several years before it recovers from the shock, and does so only then after losing many of its branches, which die off. In moving, it should be well pruned and few of the branches left. Once established, it grows vigorously and makes strong shoots. It can also be grown as a shrub, but does not produce so many flowers when grown in this way. The variety *pendula* is very fine, and quickly forms a large head. In this country it is known as the Chinese or Japanese pagoda-tree, and is perfectly hardy.

Fatal Bee-stings.—Dr. Zander mentions in *Münchener Bienenzeitung* a fatal case resulting from bee-stings. He says recently a gardener at Erlangen brought him in the course of a few days half a dozen ducklings that had died five minutes after being stung on their bills. In examining them he found, in fact, that there was a sting in the bill of each duckling. Notwithstanding this evidence, Dr. Zander did not like to impute their death to this cause, therefore asked the man to sell him one of his geese for experiment, so that he could study the effect of the poison in his laboratory. The result was astonishing, for immediately after being stung on the bill the goose dropped back as if paralysed and breathed with difficulty, and in ten minutes could no longer stand, but stretched out on its side and finally expired in four hours. It is thus evident that these birds are very sensitive to the stings of bees, and care should be taken to keep them away from the proximity of hives.

CUMBERLAND B.K.A.

The annual meeting of the above association was held at the Courts, Carlisle, on Saturday, January 29. Unfortunately, the county was practically snowed up, and consequently a large number of members were prevented from attending. There were present the Rev. B. G. R. Hale (in the chair), Mrs. Avery, Messrs. Thomas Aird, Carlisle; Douglas Bouch, Aspatria; J. J. Grieve, Blackford; Geo. Ismay, Fletchertown; James Lunnin, The Abbey; A. W. Rollo, Blackford; John Steel, Blackford; T. Redpath, Brayton; and G. W. Avery, hon. secretary and treasurer.

Apologies for absence were read from the Rev. Canon Rawnsley, the Rev. Geo. Jones, the Rev. D. R. Jones, Messrs. Joseph Bewley, James Thompson, John Hetherington, A. J. Hutchinson, and John Vicars.

The minutes of the last annual meeting were read and confirmed. The report and balance-sheet for 1909 were presented by the Hon. Secretary. The report stated that the season of 1909 had been disastrous, and the worst since the association began its work in 1901. As a result the expenditure had exceeded the income by £48. Mr. Avery announced that he had received a cheque before coming to the meeting for £10 towards paying off this deficit. The report and balance-sheet were passed.

Lord Muncaster was again re-elected president. The vice-presidents were also re-elected as in 1909. Mr. G. W. Avery was again appointed hon. secretary and treasurer. Mr. A. B. Bell having resigned on leaving Carlisle, his place was filled by the election of Mr. John B. Millican, Carlisle and Cumberland Bank, to the office of

hon. auditor, a hearty vote of thanks being passed to Mr. Bell on his retirement. The local hon. secretaries were reinforced by the addition to the list of the Rev. Sydney Swann, Miss M. Bird, Messrs. J. W. Nelson, Alfred Sutton, W. A. Bennet, James Lunnin, John Steel, and William Thompson. The executive council had the following new members elected: Miss M. Bird, Messrs. Alfred Sutton, William Thompson, John Steel, and James Lunnin.

The annual meeting in 1911 was fixed to take place at Egremont.

One of the items on the agenda was the scheme for the reconstruction of the B.B.K.A., a copy of which had been sent to each member with the notice convening the meeting. Great interest in this was taken by those present, and after the scheme had been read over by the secretary a prolonged discussion took place, and ultimately Mr. Steel proposed the following resolution, which was unanimously carried: "That this annual meeting of the C.B.K.A. considers the proposed scheme for the reconstruction of the parent association to be unworkable, and its provisions for the representation of a county so far from London as Cumberland inadequate; also that the financial part of the scheme would entail a greater drain on the income of the association than we are prepared to risk, having due regard to the problematic nature of the advantages to be derived from its adoption."

The meeting afterwards discussed the question of foul-brood legislation, and the Hon. Secretary stated that nearly 600 bee-keepers in Cumberland and Westmorland had sent in their names in favour of compulsory powers. Both county councils had also sent a request to the Board of Agriculture for the introduction of a Foul Brood Bill, and twelve out of fifteen local Parliamentary candidates had declared themselves in favour of a Bill being passed. After discussion it was resolved that the following resolution be forwarded to the B.B.K.A., proposed by Mr. Aird and seconded by Mr. Steel: "That this meeting of members of the Cumberland Bee-keepers' Association is unanimously in favour of the provisions of the Foul Brood Act now in force in Ireland being, with suitable modifications, extended to this country, and respectfully requests the Council of the B.B.K.A. to approach the Board of Agriculture, urging them to introduce the legislation required at the earliest possible moment."

Votes of thanks to Mr. C. C. Hodgson, for kindly allowing the use of one of the committee-rooms at the Courts, and to the chairman, brought a successful three hours' meeting to a close.—G. W. Avery, Hon. Secretary and Treasurer.

WORCESTERSHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting was held in the Trinity Hall, Church House, Worcester, on Saturday, January 22. Mr. G. F. Hooper was in the chair, and there were nearly forty members present, including a good many ladies.

The report of the committee stated that the past season was a disappointing one in most apiaries. Rainy weather reduced the quantity, and honey-dew damaged the quality of much of the honey. There were now 230 members on the rolls, more than in any year since 1885. The association library, which has been enlarged since the last meeting, had been much used by the members.

The Treasurer's statement of accounts, showing a greater expenditure than income, gave rise to a good deal of discussion.

The Rev. Canon Coventry was re-elected president, and the vice-presidents were reappointed, with the addition of Mr. Stanley Baldwin, M.P. The officers were all re-elected, and Mr. Knight Coutts's name was added to the committee.

At this point the president entered, and stated that he had just left a meeting of a committee of the county council, which had decided to grant the association £60 for the purposes of instruction in bee-keeping. This announcement was received with great applause.

Mr. Coutts expressed his views on the report of the special committee of the B.B.K.A.; but there was no time left for discussion.

After an adjournment for tea in the Guesten Hall, Mr. W. Herrod gave a very instructive lecture on the difficulties met in bee-keeping. The audience had now increased to about sixty, and included the Mayor and Mayoress of Worcester. Hardly any difficulty was left untouched by the lecturer, excepting those connected with diseases, into which there was not time to go. The excellent photographic slides illustrated his remedies and methods so clearly that the most experienced bee-keepers present must have learnt much that was new and useful. On the motion of the Rev. P. S. Ward, a hearty vote of thanks to Mr. Herrod was passed.—John P. Phillips, Hon. Secretary.

AMONG THE BEES.

BY D. M. MACDONALD, BANFF.

FACTS WORTH KNOWING.

Preserving Sections.—Place sections in an ordinary biscuit-tin as soon as they are taken from the hive. Gum a strip of paper round the lid to exclude the air,

and the honey will keep good for over a year without showing any signs of granulation. Keep the tin in a kitchen cupboard near the fire.

A Cheap Embedder.—Take an ordinary bradawl of a fair size, file away a V-cut groove in the point, or take a large packing needle bent slightly at the point and cut a groove at the bent part, and you have a cheap but effective embedder. If heated slightly before being run along the wire it works effectively.

Night-work for the Bees.—In the early days of June, earlier South, bees are eager to do some comb-building, and this is an excellent opportunity for getting faulty or mutilated combs repaired. With a slight flow on, bees seem to have a desire for work of this kind after their day's labours in the fields have been concluded.

A Gum for Labels.—Take the white of an egg and beat it into a froth, allow this to settle, and with a camel-hair brush apply the gum to the back of the label, then press it on the glass with a clean cloth. It sticks on the glass well, and resists damp.

Curing Foul Brood.—The disease was known to, and described by, Schirach as long ago as 1769. His system of cure reads very like one of the most modern plans for getting rid of the pest. He shook the bees off the combs, gave them a clean hive, and made them build new combs.

Driving Bees.—When turning up the skep, after giving a few puffs of smoke at the entrance and one or two smart raps on the hive sides, cover the mouth with a cloth on which have been sprinkled a few drops of carbolic acid. Leave this on until both skeps have been put in order for driving, and then uncover part of the combs next to the junction, when the bees will at once begin to ascend, and continue to do so with very little driving.

Fuel for Smokers.—Take any ordinary brown paper, cut it up into rolls to suit your smoker. Dissolve about a teaspoonful of saltpetre in a pint of water, steep the paper in this, and dry it in the sun on a fine day. If it burns too quickly, roll up alternate layers of this and common paper, and it will prove all right. No fear of the smoker going out at a critical moment.

Preserves.—Honey can be used in the making of these, and the substitute greatly improves the quality of the preserves, and adds to their keeping powers. As a substitute for sugar in tea, coffee, &c., honey is very strongly recommended.

Place to Keep Honey.—Where salt will keep without absorbing moisture from the air and getting damper, there comb-honey will keep without showing signs of deterioration. Weeping honey soon turns sour and unpalatable.

Weights and Measures.—In dealing with apicultural matters all weights are avoirdupois, 16 oz. to the lb.; and liquids are the ordinary fluid measure, 20 oz. to one pint. Naphthol beta can be purchased in marked bottles showing the quantity required to be used.

The Standard Frame.—The dimensions are as follows: Total length of top bar 17 in., bottom bar 14 in.; thickness of top bar $\frac{3}{8}$ in.; outside depth $8\frac{1}{2}$ in. Comb space: length $13\frac{1}{2}$ in., depth 8 in. (say $7\frac{3}{4}$ in.). This gives $\frac{1}{4}$ in. at sides, and $\frac{1}{2}$ in. below frames to floor. The shallow frame for extracting is similar in dimensions but that the depth is 3 in. less.

Consanguinity.—Drone and worker eggs are laid by the same queen during May. Their relationship is only half brother and sister. The drone matured from the one egg is the son of the queen only, and has no father. The worker reared from the other egg is the product not only of the queen, but also of her drone consort.

Apis Mellifica.—The position of our hive-bee in the animal kingdom is as follows: Class, Insecta; order, Hymenoptera; family, Apidæ; genus, Apis; species, Mellifica; and the most common varieties are blacks, Italians, and Carniolans. Three minor varieties are Cyprians, Holy Landers, and Caucasians.

Metamorphoses.—The queen's egg takes three days to hatch; the larvæ are fed five days for workers and queens, and six days for drones. The larval queen spins her cocoon in one day, the worker takes two, and the drone three. The period of rest is in each case two, three, and four days, while the change into a nymph is accomplished in all cases in one day. The queen spends only three days as a nymph, workers and drones take seven days. Counting up these separate periods, the queen issues after fifteen days, the workers take twenty-one, and the drones twenty-four.

Finding a Queen?—A young virgin is at times very difficult to spot in a crowded hive, as she is small, quick, and very elusive in her movements. Failing to see her, note if a central frame has a part of the cells near the middle cleared of honey and polished clean and bright. If so, close your hive, confident that you have a mated queen present.

Pollen.—When breeding starts in spring a supply of this—indispensable to the manufacturing of young bees—is necessary. As a substitute, in early spring supply them with oatmeal, common wheat-flour, or pea or lentil meal. Give it in-

side in a division of the overhead feeder, or in an old skep or box outside. Place near it a small piece of honey-comb to attract the flying bees.

Foul Brood.—If you have doubts about any of your combs when examining during April, just open your "Guide Book" at page 173. Facing that page is an untouched photo from Nature. After comparing carefully there should be no doubts even in the mind of a novice.

"Balled" Queens.—Do not begin pulling the brood-nest apart at too early a date, as this distressing event is almost certain to follow. The bees in their love for the mother-bee, and fearing danger, hug her to death, thus killing her with kindness!

No Excluder.—A bee-keeper may work a lifetime for section-honey without using excluder-zinc, and never see signs of a queen having been aloft, unless he has done something to tempt her there.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE BRITISH B.K.A. AND COUNTY ASSOCIATIONS.

[7735.] The British Bee-keepers' Association has taken in hand its own reorganisation, and without doubt much good will follow to apiculture in Great Britain. Would it not be well if the county associations faced the same task and put their houses in order? Certainly, if there is need; but you ask: "What is wrong?" Would it not be voicing the thoughts of many if the reply is that the organisation of many of the associations is utterly inadequate to meet the needs of bee-keepers, and also that by far the greater number of British bee-keepers are not touched by the association of their own county? The fraternity (speaking of bee-keepers as a whole, not of the members of the associations) is at present a rope of sand, with little cohesion. It lacks a definite purpose, a common aim, as a brotherhood, and it seems to be somewhat like a bee whose head has been recently severed from the body—there is life, possession of faculties, a continuance of most of the functions of the body, and yet it is a very poor creature for any practical purpose. The county associations were formed to rectify this; but do they? Probably about one-tenth of the bee-keepers are members of their particular county association. Many know nothing of it, they have not been invited to join, and, even if they were, the inducements to membership are so small and uncertain that the majority of them would not be enrolled if asked. With the enrolled members the state of affairs is not satisfactory. A lack of enthusiasm is evident. There seems very little *esprit de corps*, the subscription is often grudgingly paid, and many remove their names after a short membership, dissatisfied. This may not be true of some associations. If so, "more power to the elbow" of the secretary and committee—they are evidently on a good track; but alas! it is true of several associations, as will be readily admitted.

Where does the fault lie? Clearly in organisation. And under present circumstances the wonder is that things are as well managed as they are. The chief worker is the hon. secretary, often a hard-working, keen man, a practical bee-keeper, and one worthy of confidence. But in most cases he is a business man with his hands full without the work required of him as secretary. He is not paid for his duty; it brings him in perhaps nothing—on the contrary, he is out of pocket to a considerable extent. What he does he does cheerfully and well; but he cannot do the work of a county association as at present constituted. How can he keep in touch with bee-keepers all over his county or half-county, correspond, visit those needing advice, keep the accounts, attend to local shows, canvass for fresh members, assist members with sales, and do the scores of small odd jobs which should be done if the association is to flourish? He succeeds somehow in doing most of it; but with very limited time and without public funds to pay for travelling, &c., his influence can only be felt in his immediate neighbourhood, and vast numbers of bee-keepers outside, say, a ten-mile radius must of necessity be left almost without a shepherd.

The difficulty could be met if each association set itself to encourage and organise the formation of local branches or lodges all over the district or county. The county association to which the writer belongs is supposed to take in eight or ten good-sized country towns; each of these might have its branch, every branch having its own secretary and committee and taking in the country round for a radius of eight miles or so. Every member of committee should be responsible for a district, so that no bee-keeper, however humble, would be overlooked. Soon

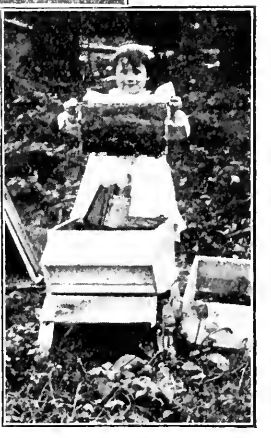
(*Correspondence continued on page* 48.)

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

Mr. Wm. Gee, whose picturesque apiary we illustrate this week, is well known at the British Bee-keepers' Association quarterly meetings, which he never fails to attend. His success in building up a prosperous bee and honey trade should prove interesting reading to novices who aspire to do likewise. Mr. Gee says:—

"About sixteen years ago I was working at a house where bees were kept, and several times during the week the bees swarmed. A lad whose father kept bees



MR. W. GEE'S APIARY, WARE ROAD, HERTFORD.

happened to be working with me, and of course he began to tell us all he knew about them. I became very much interested, and made up my mind to own a stock of bees as soon as possible, and within a week or two I heard of a neighbour who had some to dispose of. I bought one stock at the end of July, for which I gave 25s. In the autumn I purchased two more lots of bees, one being in a skep; but of course I did not get any honey from them that season. I have since wondered how the bees survived or why they did not decamp, as every time I went home I used to open the hives to see how they were getting on. During the winter those in the skep died; but next year I took about sixty sections from the two hives left. I might say here that as soon as I purchased the bees I inquired if there was any paper dealing with bee-keeping, and so heard of the B.B.J., which I have taken in ever since. I also bought a copy of the 'British Bee-keeper's Guide Book.' I read in B.B.J. that it was possible to get bees given to one for the trouble of driving them, and so I began to look round to see if I could get any, and being successful in my search, I soon by this means increased my apiary to about ten stocks. My garden being small and surrounded by houses, this number was as many as I could keep, so I thought I would start an out-apiary. This I did, taking the hives to a village about two miles from Hertford, and here I obtained some of the best crops of honey I have ever had, as in a good year I used to average about 60 lb. per hive. I might say the garden that they were in had had bees in it for forty years. But, unfortunately, I had to give up the place there, and have not been able to get another in the same part, but hope to do so some day. About this time I was asked to go and look at some bees belonging to my employer, as they did not seem to be doing very well. On examination I found they had foul brood, but he would not take my unsupported word, and had two other men in to see them. These new advisers told him I was wrong; but I was confident from the description in the 'Guide Book' that I had diagnosed correctly. In the end we sent a sample of the comb to the B.B.J.

office, and in reply we were informed that it was a very bad case of the disease, so I had permission to destroy five stocks out of ten. My treatment was so successful that in the following year I took an average of forty sections each from the remaining hives, and this within 500 yards of Hertford Town Hall.

"About six years ago I passed the examination for third-class expert's certificate, and since that time I have gradually built up by purchase and artificial swarming an apiary numbering at the present time 200 stocks. The home apiary contains about one hundred, the others being in out-apiaries; but as we are always buying and selling, the number kept varies considerably. I propose forming several more out-apiaries this summer, as I have no difficulty in selling honey; in fact, I could sell double the quantity my own bees produce, and I buy all that is for sale around this district. After taking an expert's certificate, I turned my attention to starting a bee-keeping association in Hertford. With the help of other enthusiastic bee-men this was formed, and the association numbers at the present time between sixty and seventy members. Several of our members secured an average 'take' last season of 50 lb. or 60 lb. of good honey, one lady taking 100 sections from one hive.

"The photos of my two children were taken in May last. They are not a bit afraid of the bees, and will soon be able to help me with my bee-work, I hope."

("*The British B.K.A. and County Associations*," *continued from page* 46.)

matters would improve, a brotherhood would spring up in the centre so formed, and a lot of good would be done. These branches would be part of the county association, which would be affiliated to the central society, and so the work of the county associations would be done thoroughly. But how are we to start these branches? Well, this brings me to my story.

Some time ago an invitation reached me to give a lecture on the honey-bee to a literary society in the Midlands. The lecture was to be held at 3 p.m. This left the evening free for another meeting. An enthusiastic lady bee-keeper undertook to collect the local owners of hives, so that they could also have a lecture. It so happened that on the same evening a large political meeting was being held, and we feared that few would come. The bee-man, however, is not like other men. When he takes to bees his love is wholehearted, and lesser loves stand a poor chance with him. Politics, therefore, did not interfere. The room was full, the audience keen and appreciative. That day two surprising things were revealed. In the afternoon it became evident that even well-read men and women may understand nothing of the subject. The work of pollination, the natural history of the bee, the nature of honey, the origin of wax—of these one seemed to be introducing to them new realms of knowledge. The encouraging feature was that those who listened wanted to hear more, and asked for another lecture. The second surprise came in the evening: it was the evident need to teach bee-men their work, and their pleasure in learning. First there was a practical demonstration with a hive, then a lantern lecture, then questions. But after that came the reward for the lecturer. It was proposed and carried that there and then a local branch of the B.B.K.A. should be formed. A secretary was appointed, plans briefly discussed, and the affair was started as a living, vital organisation. The suggestions were a local meeting-place, with a nucleus lending library of bee-books, the possibility of one of their members becoming a third-class expert, the advisability of having a bee-tent at the local summer show, &c. These things they will carry through and succeed with.

Here is an object-lesson. A need in that town has been met. The same need exists in hundreds of towns. If the secretaries of the county associations would in conference draw up rules and suggestions for forming local branches, and organise a series of lectures in the chief towns in their counties, they would set the ball rolling, and surely it would meet a very real need. These small branches would get hold of hundreds of bee-men at present neglected, they would create a great interest and enthusiasm, and soon apiculturists by their union would be a power in the land.

The system is a recognised one among other guilds and crafts—the head society, the county association, the local branches all working together. The central society without the county association will be merely academic, the county association without the central society but a headless trunk, and these without the local branches like an unfortunate insect bereft of its legs and wings. United they make a complete and perfect organism, full of life, vigour, and crowned with success.—D. S.

ANCIENT EGYPTIAN BEE-KEEPING.

[7736.] While thanking Mr. Green for his reply (7731), I must confess myself disappointed to find on what a very slender

foundation his assertions as to the "high state of perfection" of ancient Egyptian bee-keeping, authoritative as they seemed, were really based. Facts are dull dogs; fancies much better company. The trouble is that many readers of our JOURNAL are not in a position to draw for themselves a dividing line between the two.—H. J. O. WALKER (Lieut.-Colonel), Budleigh Salterton.

FOUL-BROOD LEGISLATION.

[7737.] Mr. Horsley in his letter (7732) admits that, when the vote was taken on this subject, "the majority of bee-keepers voted for it," and his plea against this majority having their way is, "the minority had by far the larger number of stocks." This points to the fact that the minority are mostly experienced bee-keepers with large apiaries, who know how to tackle foul brood should it unfortunately appear among their stocks; but is this an argument against such an Act? They have the knowledge and the means to take care of their own stocks, but the majority, composed of poorer and, perhaps, more ignorant (though this is by no means always the case) bee-keepers, should be helped, and protected from themselves in the case of the ignorant.

One never hears of "the liberty of the subject" being interfered with when the sanitary inspectors or swine-fever inspectors make adverse reports; why should it be so in the case of bee-keepers? He would be but a poor and tactless inspector who fell foul of known masters of the craft; but can anyone deny the good he might, and would, do amongst those who have less knowledge, or are not in the position to do what is needful? Surely, for the good of the mediocre majority, the expert minority need not take up such a "hands off" attitude. That those who have knowledge and experience *are* always willing and ready "to go out of their way to help other bee-keepers" is one of the strongest bonds that bind all lovers of the bee-people together, and it would be a bad day for our little friends if this spirit of helpfulness died out. But, after all, the kindliest of us can help only our immediate neighbours as a rule, and there are scores, if not hundreds, of small bee-keepers living in out-of-the-way districts—I am thinking more especially of hill shepherds in this district, and all along "the Border" and among the dales—who have not the good fortune to have such kindly and expert help within reach; are they to be shut out from any chance of assistance? In Canada foul brood may be rampant in spite of legislation, but how much worse it would be without Government help is proved, I think, by the thousands of cases cured by Mr. McEvoy yearly.

I agree with Mr. Horsley that there are two sides to every question, and he and Mr. Green (7727) seem afraid of dire results and infringement of the liberty of the subject, the latter going as far as to fear being "dragged like a felon from his children," and being "thrown into a prison-cell to await his trial." That is one side; the other, I am glad to see, is taken by our Editor, who does not fear the dire results anticipated, and, I should hope, by all unprejudiced bee-keepers.—F. SITWELL, Wooler.

BUCKWHEAT HONEY.

[7738.] I was interested in reading Mr. D. M. Macdonald's suggestion (page 23) with reference to growing buckwheat for honey.

I once had some honey sent me by one of my customers for sale which was entirely different from anything else we had tasted, and was said to be from buckwheat. It was very dark, and to my mind it had a very unpleasant flavour, although I must say that we found one customer who bought a quantity of it in successive lots. I cannot say that his testimony will have much to recommend it to the ordinary honey-lover, as his reason for buying it was that he was a victim to chronic constipation, and found that this particular honey was a very good medicine for him. However, coming late, as Mr. Macdonald says it does, it may be very useful for building up stocks, even though the honey is not particularly saleable.—GEORGE ROSE, Liverpool.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Stimulating Ideas (page 5).—No doubt that American would rouse the bees from any kind of lethargy except death with his vigorous greeting. Shake, stranger! And that grave working bee at the show was, of *corse*, obliged to be energetic, though mute in its "undertaking." Probably it knew that the public was looking on!

Ethereal Thought (page 6).—I am glad that "D. M. M." champions the reasoning of the bee. Why should we deny reason to the lower creatures, and label all their acts of intelligence—Instinct? The assumption must seem arrogant to those who have lived with and loved intelligent dogs. Even the critics sometimes use arguments which really go to prove a difference of reasoning power, and, *ergo*, the possession of it. It is no doubt difficult to draw a line between instinct and reason, and some

striking exhibition of reason might perhaps be construed into an expression of a dormant instinct. In comb-building the bees must be guided somewhat in their plans by the comfort of their position, for they must first hang up those oven folds of clustered drapery which are to contain the hot new cakes of comb.

Levitation (page 7).—Mrs. Birch's fascinating letters are full of interesting information, and I for one hope that there will be room for more of the same, even at the expense of the B.B.K.A. discussion! I am, however, quite deterred from wishing to go to South Africa by some of the terrors she quotes so unconcernedly. Thus, the removal of a man's hat "provided the bees with an opportunity for stinging his head, *which they took*." But, w-what did they w-want it for? A hive? And what a remarkable instance of their lifting power and ethereal reasoning. Again: "In the Tana valley a very large black bee is met with." I presume, as no more is said, that the gentleman's diary was found to end there when he was discovered. But how horrible! Have we no St. George amongst us?

B.B.K.A. Offices (page 10).—Some central bodies are expected to fill every office under the sun! I do not know who is the "member of Council," but I think that the answer to his question will be found on page 502, in the appointment of committee, and of course in the minute-book of the Council. As this writer has immediate access, it seems to me, if I may say so without offence to him, that his question might have been put direct to the secretary quite as well as through the pages of the B.B.J.

Foul Brood in Switzerland (page 13).—This report is very cheering, as it shows that others have the same difficulties to meet, and that our own are not peculiarly insular. Why should we not go and do likewise? We have the trained experts, subscriptions are forthcoming, and members are willing to allow destruction without compensation. The difficulty is the apathetic or obstinate outsider, and the one thing to do appears to be to get the Government sufficiently interested and convinced of the importance of the subject, and then——! What, however, are we doing in the meantime? Are we continually preaching the sanitary gospel?

Woodley's Strain (page 17).—I do not quite understand Mr. Soal's objection to term these bees a "strain." Mr. Woodley has, I take it, bred and increased these excellent bees by selection for years, and such treatment must have its result. Even the accidental introduction of new blood, unless on an overwhelming scale, would not really interfere with, but rather strengthen, the continued process. By the way, I should like to state my belief that the yellow bee would gradually and entirely disappear from this country, unless definitely upheld. So that, in districts where there has been no recent introduction of these undoubtedly beautiful bees, it must be often impossible for the eye to detect the immigration.

Stocks v. Swarms (page 18).—I do not think that I understood the problem to be complicated in this fashion, and that the shallow frames were already full of comb. It does not seem, under these circumstances, possible to make any useful comparison at all, particularly if we involve the question still further by throwing excluder into one side of the sum!

Topsy-turvy (page 18).—Mr. Smallwood may be right about the Suffragettes, but surely a perusal of the history and mythology of the ancient Greeks does not warrant the idea that women were despised by them. Nor would it seem quite true that Christianity was necessary to teach them the spirit of chivalry. Are we not somewhat prone to assume that we have, at last, reached civilisation for the first time? And is it not possible that an unfortunate decline in chivalry may be responsible for the Suffragettes? Are we then "progressing" towards the hival economy, when "chivalrye" shall find its expression in the destruction of the crop of males?

British Honey (page 19).—I think that Mr. Coates is right in estimating that 400 tons is the maximum increase to be hoped for in one year from our slow-going people. (Also, I hope we may not see it until they have made a market for it.) But to be really moderate, as he evidently wishes to be, he should have only taken 200 tons in the first instance, and then, as I take him, working with the Import Statistics on his system, the price of this quantity would be 1s. 8d. per lb.! That would show a good profit even in a bad year, and induce more people to become bee-keepers, and then we might hope for the 400 tons the following year! Then, ay! then, we could deal with figures showing so many bee-keepers paying so much apiece, and the B.B.K.A. presenting the Government with a couple of "Dreadnoughts." Really, it is wonderful what can be done with a few figures if an inspired organiser knows how to manipulate them to the best advantage of the community, having regard to the increased demand for British honey on Polar expeditions, and making due allowance for leeway and the swing of the pendulum. (N.B.—$\pi = 3.14159$.)

Cappings of Comb (page 49).—I feel that some apology is due for the serious

nature of this column, but I am just extricating myself from *La Grippe*, and I have found, to my sorrow, that it has the power to squeeze most of the nonsense out of one!

Queries and Replies.

[3989.] *The Stomach-mouth of the Bee.*—1. In the 1905 edition of "A B C of Bee-Culture" Dr. Miller says, in note 313, referring to page 12, that the stomach-mouth is disconnected at the will of the bee from the honey-sac, and connected up to the œsophagus direct when the bee wishes to feed chyle from chyle-stomach, and so avoids returning chyle through honey-sac. This would mean that the chyle-stomach would have to pass through the thorax. Does this, in your opinion, actually occur? Your book, "The Honey-Bee," does not seem to support it. It is, however, important to clear this up, as it is, if so, a thing of great curiosity. 2. Again, E. R. Root says, on page 12, this same valve is fringed with hairs for holding back honey in honey-sac and passing on pollen to chyle-stomach, *i.e.*, filtering a solid through, and holding back a liquid. This sounds improbable, but will you please pass your view before I reject it?—H. O. Morgan, Bristol.

Reply.—1. You have evidently misunderstood Dr. Miller's statement, as his words are, "The stomach-mouth solves the problem by moving up and joining itself to the œsophagus, leaving the honey-sac shut out entirely." Exactly how this is done is shown on page 122 of "The Honey-Bee," where you will find a diagram of stomach-mouth, and it is the prolongation attached to it which enables the mouth to be extended to the œsophagus without moving the chyle-stomach, which therefore need not pass through the thorax as you suggest. 2. The down-pointing hairs prevent the pollen from returning when the lips are closed, and have nothing to do with holding back the honey. This is held back by the closing of the lips of valve, and the contraction of the muscular layer of the honey-stomach forces the liquid through the œsophagus out of the mouth.

[3990.] *Protection against Stings.*—1. I should be greatly obliged if you would tell me if there is any device by which the hands may be perfectly protected from stings while manipulating bees. I keep a few hives in Natal, and actual stings, or the fear of them, often make me "scamp" my work. It also militates against one's interest in an occupation which is otherwise very fascinating. Are india-rubber gloves practicable and are they sting-proof? 2. I should also be glad if you would inform me where I could purchase honey for export to Natal. Is it possible to obtain any from the bee-keepers' association?—E. C. Hawkins, Birmingham.

Reply.—1. Hands can be protected by means of india-rubber gloves, which are sting-proof. Some use "Apifuge" or a few drops of methyl salicylate, and real oil of winter-green (Oleum Gaultheriæ Procumbentis) is a good preventive of stings. 2. The associations do not, as a rule, deal in honey, although some of them dispose of it for members. If you require English honey in any quantity your best plan is to advertise for it in the B.B.J., and no doubt some of the large bee-keepers would be able to supply you with it.

[3991.] *Rusty Extractor, &c.*—I should be obliged if you would answer the following questions: 1. The tin of my extractor in some places is eaten away; would this have a detrimental effect on the honey? 2. Can shallow frames which have been used over a foul-broody hive be used again with safety after having been exposed to the frost? 3. What kind of solder do you use for the inside of honey-ripener?—J. Anden, Hendon.

Reply.—1. Rust in contact with honey will make the latter black. Clean the rust off, warm the tin, put on some beeswax, and rub it in with a rag. 2. No, they should on no account be used until thoroughly disinfected. A low temperature retards the growth of the spores, but does not destroy them. 3. Ordinary tin solder.

[3992.] *Fertilisation of Eggs.*—Will you please advise me respecting the following reply to a query on page 29 of B.B.J. for January 20? "If a queen has no worker-comb, only drone-comb in which to lay, she will, if driven to it, lay worker-eggs in such comb, and they will produce workers." I was under the impression that the queen-bee only laid one egg, or I might say two eggs, which produced males or females. I thought all the eggs were alike, and that the difference was owing to the cell they were laid in, and the special feeding and nursing. If the queen does lay one egg for a drone, another for a worker, and a special egg for a queen in a particular cell, how does she know she is laying that particular egg if she lays at the rate of one or two thousand eggs per day? Thanking you for the pleasure I get from your interesting paper every week.—J. Garside, Manchester.

Reply.—There is no inconsistency in the statement, for the eggs are all alike, and are only differentiated by the fact of the queen fertilising those she intends to produce workers, and laying those she intends for drones without such fertilisation. Usually she lays a worker-egg, *i.e.*, one that is fertilised, in a worker-cell, and at will lays a drone-egg, *i.e.*, an unfertilised egg, in a drone-cell. The only difference between a worker and a queen is in the feeding and

nursing of the grub, the eggs being alike fertilised. The queen knows quite well what egg she wishes to lay, and can fertilise it or not at will.

Notices to Correspondents.

H. H. (Tunbridge Wells).—*Unsaleable Honey.*—As you have only 6 lb. of the honey you had better feed the bees with it in spring, first liquefying it, of course, and give it to them like syrup. We are always pleased to give advice to readers.

BOURNVILLE (Birmingham).—*Restless Bees.*—The bees sent are quite normal, and there is nothing to show why those in this particular hive should fly out in all weathers. It is possible that they may be restless through the loss of their queen.

R. A. (Newport).—*Disinfectants.*—If you refer to page 178 of the "Guide Book" you will see "Izal" mentioned among other antiseptics which evaporate at the ordinary temperature of the hive, and whose vapours arrest the increase and growth of the bacilli, but they do not kill them, and as germicides they have been found practically useless. "Izal," phenyle, creolin, and lysol are analogous, and of about equal value. Formalin and naphthol beta are far more reliable. By referring to page 178 of B.B.J. for 1899, you will find a table of the values of the different disinfectants and their germicidal properties.

JACK (Cardiff).—*Unsuccessful Bee-keeping.*—1. In any case, whether there is disease or not, hives should be disinfected before they are used again. All old frames and combs should be burned, and hives steamed or scrubbed with boiling water and soap, then painted with a solution of carbolic acid (see "Guide Book," page 180, and recipe No. 10, page 198). 2. Yes, they require attention because the bees are not destroyed as they are in straw hives. In these the bees are constantly renewing their combs, and receive clean hives. Bees in frame-hives require them also to be cleaned out occasionally, and must have the opportunity given them to make new combs. If left to themselves year after year they are sure to deteriorate, the combs may become choked with pollen, and thus reduce the breeding room, and may also breed wax-moth. 3. As you now have the "Guide Book" you will see what management is required for success.

H. B. (Kent).—*Cleaning Metal Dividers.*—The easiest way to clean these is to put them in boiling water, and you will find the wax and propolis will easily dissolve. You can also clean them by scraping with a scraper, but the boiling-water method is in every way preferable.

J. W. G. (Huddersfield).—*Starting Bee-keeping.*—You could very well keep a couple of hives in your garden of ten square yards, without detriment to anyone, if you manage them properly and place them in such a position that there is no traffic in front of their entrances. If damage is caused by your bees stinging persons or property, such as live stock, you would be liable for compensation, but you can insure against such risk for 1d. per hive, minimum premium 9d., if a member of a bee-keepers' association, or 6d. extra for a non-member.

F. W. T. (Broadwater).—*Good Locality for Bees.*—If you can get a suitable place, either Heathfield or Burgess Hill would do very well, both being very suitable localities. The capabilities of the two places would depend entirely on the bee-keeper and the efficiency with which he carried on his business.

E. N. (Herts).—*Bees Dying.*—The bees on the comb appear to have died of starvation, but as you say they had plenty of stores, the cluster of bees had probably dwindled until it has become too small to keep warm. Without fuller particulars we should suspect disease as the cause of all your colonies going off in this manner. If this is so, it would not be safe to use the combs, and we would advise you to destroy them and to disinfect thoroughly the hives and all appliances before you use them again.

L. M. D. (York).—*Painting Hives.*—You must on no account disturb the bees by painting their hives in winter, as you would cause them to have dysentery. Hives should not be painted at any time when the bees are inside, and the only way to do it is to have a spare hive in which to place the frames while the hive is being painted. There should always be a spare hive or two in every apiary, as the bees should be put into clean hives every spring and autumn.

ARFON (Carnarvon).—*Best Bees for Beginner.*—1. We would advise you to begin with British bees, as they are much more gentle than hybrids. 2. Start with a swarm as recommended on page 145 of "Guide Book."

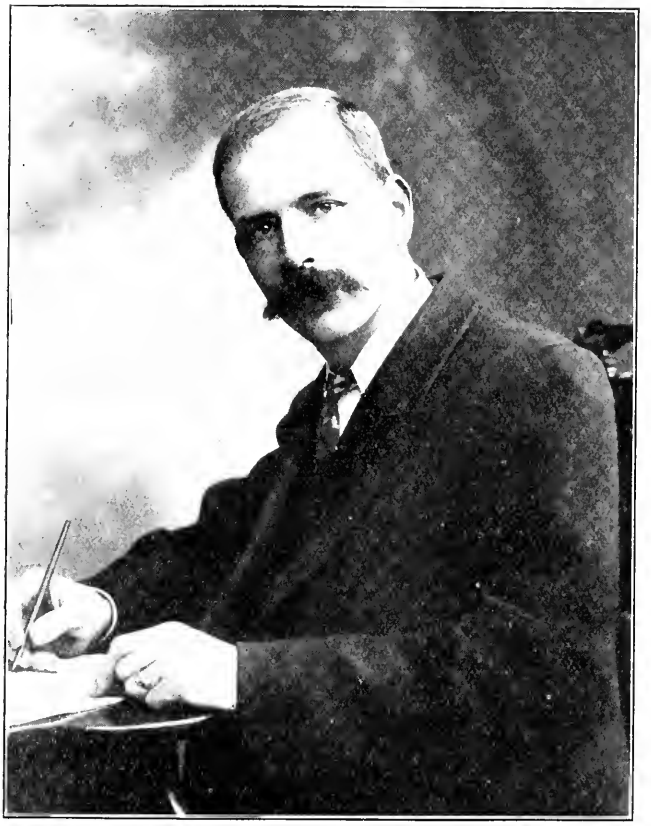
J. B. (Surrey).—*Dead Stock.*—The bees are too decomposed to examine for disease, and must have been dead some time. There is no brood in frame, which appears normal, and it is quite possible that the bees have died from being too few. In any case, as you say there is disease in your neighbourhood, you should take the precaution to destroy the combs and disinfect the hive before you use it again.

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. WM. HERROD, F.E.S.

It will have been seen that at the last meeting of the Council of the B.B.K.A. Mr. Wm. Herrod was appointed secretary, to fill the vacancy caused by the resignation of Mr. E. H. Young, and we have now the pleasure of presenting his portrait to our readers.



MR. WM. HERROD, F.E.S., SECRETARY, BRITISH BEE-KEEPERS' ASSOCIATION.

The new secretary was born in 1873 at Sutton-on-Trent. He was educated at the Board School, and was intended for the teaching profession, which for a short time he followed, but circumstances intervened which prevented him from continuing to teach. He then became a garden boy, and, being ambitious and anxious to get on in the world, he worked for any farmer from whom he could earn a few shillings. Later, he was employed in the workshop belonging to his father, who was a joiner and builder, and there he continued until 1894, when he went to the late Mr. J. H. Howard, of Holme, near Peterborough. Here he learned all the work connected with the appliance trade, from grooving and splitting sections to making foundation. During this time he had the management of Mr. Howard's apiary of over a hundred colonies, and he thus gained a thorough insight into bee-keeping in all its branches. As a youth he was always fond of living creatures, and as near the school there was an old-fashioned skep apiary, it was with envy that he used to watch the taking of swarms and suffocation of the bees by sulphuring at the end of the season. He had a longing desire to keep bees, and when about fifteen years of age got hold of Nutt's "Management of Bees," and commenced to make one of Nutt's collateral hives. He had completed the central box when his old friend and tutor Mr. R. Mackender—who now lives at Newark—came into the shop. Seeing him at work, he asked what he was doing, and upon being told said, "That is not

the way, my boy, to keep bees. Come down and look at mine, and I will show you." The invitation was accepted with alacrity, and Mr. Mackender showed him his apiary, and also lent him the "British Bee-keeper's Guide Book." Nutt's hive was consequently discarded, and with the help of his brother (who is now well known as the late expert to Essex, and the present expert to the Lancashire Bee-keepers' Association), who also became interested, Mr. Herrod commenced to make a proper movable-comb hive. The two brothers had by this time saved sufficient money to buy a stock of bees, and were allowed to do so on promising to look after them well, and not treat them as they had done other pets, which after the novelty had worn off would have fared badly but for the attention given them by their parents. The first stock did not survive long, being the victim of over-manipulation; so keen were the brothers that they used to examine the colony two or three times a day to see how the bees were getting on, with the natural result that they died. Their funds now being exhausted, they were not able to purchase another lot. The village flower show was held about this time, and at it the expert of the Notts B.K.A. gave a lecture and demonstration of bee-driving. They then decided that they would obtain bees by driving, and persuaded a couple of old bee-keepers to let them drive their bees instead of sulphuring them. Having in this way obtained the bees and a few empty combs, they made a couple more hives, and were able to winter three colonies. One old man whose skeps they drove was so pleased at the lives of the bees being saved that he insisted upon them taking a full skep of bees for their trouble, as well as the driven ones. During the winter more hives were made, and so they went on until a very nice apiary was established from driven bees, for never after that did they spend a penny in the purchase of any. They were also very successful at exhibiting, and took in a couple of seasons over three hundred prizes at local and other shows for bees, honey, and produce, also beating in the Trophy Class at Moor Green in 1896 the late Lord St. Vincent, who for a number of years had carried off the first prize in this class. In 1892 Mr. W. Herrod made his first attempt to obtain the third-class expert certificate, and was unsuccessful, as he had no idea of what was required and his knowledge at that time was not sufficient to allow him to pass. By work and perseverance he succeeded the next year, and duly obtained his certificate. After finishing with Mr. J. H. Howard, he returned home and undertook the expert work for the Notts B.K.A.

The following year he was appointed expert for the Lancashire and Cheshire B.K.A., and spent two seasons in those counties, where he made many friends, who remain staunch and true to this day.

In the Jubilee Year (1897), at the County Trophy Competition of the "Royal" Show held in Manchester, he staged the Lancs. trophy, and also assisted in staging the winning trophy from his native county of Notts. Here he attracted the attention of the late Mr. W. Broughton Carr and Mr. H. W. Brice, and was asked to come South and take the appointment of expert to the B.B.K.A., to lecture at Swanley Horticultural College and at the "Royal" Show, also to establish the experimental apiary of the B.B.K.A., manage the college apiary, and be touring expert to the Kent and Sussex B.K.A. So well did this scheme work that shortly afterwards he was asked to reside in the college as staff instructor in bee-keeping and woodworking, where he remained till the year 1893, when the establishment was turned into a women's college only. In that year he married, and went to live at Luton, where with his partner, Mr. Stewart, the "W.B.C." Apiary and School of Bee-keeping was established, from which students have been sent to every part of the world.

Mr. Herrod still retains his post at Swanley, travelling down each week. He also took up poultry-keeping and lecturing, and holds an honours certificate from University College, Reading, where he studied. He also holds a permanent post as poultry instructor under the Beds C.C., and various other appointments as lecturer on apiculture. He obtained his second-class expert certificate B.B.K.A. in 1896, and the first in 1903.

Mr. Herrod is a Freemason and life total abstainer. His time has been too fully occupied in work and study to allow of his taking part in municipal or parochial affairs. He attributes his success in the first place to his parents, who always encouraged both their sons in all those pursuits which were interesting and profitable, rather than allowing them to spend their time in the streets or in places of doubtful reputation; to the fatherly interest and advice of the late Mr. W. Broughton Carr, whose death was a severe blow to him; and to being able to get through a great deal of work by living a sober, persevering, and methodical life.

During the time that Mr. Herrod has been expert to the B.B.K.A. he has carried out his duties in a thoroughly efficient manner, and we have no doubt that the decision of the Council to appoint him as their secretary will meet with the approval of the members of the B.B.K.A. and give all-round satisfaction.

A TWO-QUEEN SYSTEM.

SOME REMARKS ON ITS ADAPTABILITY FOR A HEATHER DISTRICT.

BY "MEDICUS," NEWCASTLE-ON-TYNE.

There have been from time to time references in the B.B.J. and the American bee-papers to a two or multiple queen system of apiculture.

The discussion of its practicability has in this country never been at all exhaustive, and where reference has been made to the subject there has nearly always been misunderstanding as to what is meant by a two-queen system, owing to its confusion with the system advocated by the late Mr. George Wells.

Mr. Wells did not advocate working a colony with two (or more) queens, but advocated giving to *two stocks* a super, or supers, to which both colonies had access. He profited by the mutual warmth which two colonies in such close proximity must derive from each other, and this enabled them to build up more rapidly in the spring. This advantage was increased during the honey-flow, when, by having a super common to the two colonies, a larger proportion of nectar-gatherers were able to be liberated from home duties.

The method has somewhat fallen into disuse owing to a "swarming" and a "wintering" difficulty. In such a hive, when swarming occurs, a swarm almost invariably comes off from each colony at the same time, and the two unite, although only one side may have made preparations to swarm. Further, if the two parent stocks are left to re-queen, it is not an uncommon experience for the bee-keeper to find that the young queen on one or other side disappears. This is due to one or other returning to the wrong side after a mating flight, and thus one side becomes queenless.

When two colonies are wintered in a single hive in which the entrances are next to each other and facing in the same direction, as in a "Wells" hive, if there is a disproportion in the strengths of the colonies the bees often drift over on the flying days to the stronger side, until finally none are left. This drifting of bees into other colonies is very much more universal than is commonly appreciated by bee-keepers who keep their colonies close together.

For instance, this occurs when a large number of hives are wintered in a row, for the strong hives gain at the expense of the weaker. This is often because the younger bees in their cleansing and play flight do not localise carefully, but join in with the greater number. The same drifting happens if the prevailing wind blows along the front of an apiary, the hives at the lee-side profiting at the expense of those to windward. This mixing of bees is well seen in an apiary where there are many black colonies kept and only one yellow colony (or *vice versa*). In a short time almost every black colony will have a few yellow bees, the number varying with the nearness or distance of the yellow hive from any other hive. In a "Wells" hive, as all the bees have a common scent, it is very easy for young and old to unite in one colony. The "Wells" hive has the further disadvantage, for those who cultivate a heather harvest and have to send their bees long distances to the moors, that it is large, heavy, and cumbersome.

A true double or multiple queen system is one in which a single colony with a single entrance has two or more queens laying at the same time, and the workers of which have access to every part of the hive. The queens may be either loose in a common brood-chamber, or kept apart from each other by queen-excluders. (For convenience and certain practical reasons the latter method is preferable.) Such a system differs fundamentally from the "Wells" system.

The most common criticism made by the clover man against the system of keeping two queens in a colony is that the difficulty is not in getting a queen to lay in the spring and early summer, but in having sufficient bees to cover the eggs that she lays. The average queen, he says, can work well ahead of her bees right up to the harvest. Yet bee-books and experience tell us that young queens build up quicker in the spring than older ones, and it is a common experience that in the spring Italian colonies often have five or six combs of brood at a time, when blacks have brood on not more than one or two. Be that as it may, there is no doubt that during the latter part of June and during July two average queens in one colony can, and do, produce more brood than any single queen, and as by the time heather blooms all swarming is over, no heather man need be afraid that his colonies will be too strong for the moors. Having come to this conclusion, I have during the last two seasons been carrying out experiments to test the practicability of such a system.

My results tend to suggest that—

(*a*) Worker-bees will *always* accept a second queen and her attendants, provided that she has a brood-nest, and that they all have the common scent of the hive to which they are to be united; but it is essential that both the new queen and the queen-mother are actively laying when the union takes place.

(*b*) If two such queens, once safely introduced, are kept apart by an excluder, both will continue to live and lay in the one colony until the autumn. Then, as breeding slackens down, sooner or later one or other will be found missing.

(c) Two or more *laying* queens with a common scent can be kept loose in a colony (without the aid of excluder-zinc) as long as they continue to lay, but the queen which first ceases to lay will destroy the other, or others. Consequently, two virgins cannot be kept together, or a virgin with any fertile queen other than a queen about to be superseded. (There have been exceptions reported to this as to every other bee-law.) This, perhaps, suggests a reason for only one queen surviving after two swarms have united and been hived, though the worker-bees themselves will accept any queen, or queens, at this time. Queens coming off with a swarm are either virgin or fertile queens which have been lessening their egg output for some days, so that they may be light enough to take flight with the swarm. If this deduction is correct, it explains why, in Nature, two queens are so rarely, if ever, found in one colony (excepting in superseding), but why it is possible under the bee-keeper's management for such to exist contentedly together.

I have successfully worked two queens in tiered-up English hives, with two standard ten-frame brood-chambers separated by excluder, in the seasons of 1907 and 1908, but find that, for the practical working of this system and for the heather harvest, a divisional brood-chamber hive is much more suitable. I use a "Root" ten-frame hive of close-ended frames 17 in. by $5\frac{3}{8}$ in., giving a comb area equal to $7\frac{1}{2}$ English standard frames in each division; two such divisions form the normal brood-nest when used with a single queen. Although this may appear a large brood-nest, it is not too large, as the drawbacks of a large brood-nest can be obviated by the reversal of the two halves at the time of supering. In this way the brood is brought next to the supers, and the storing of honey above the brood, except in the super, is prevented by this manipulation. A hive of this size has this further advantage, that a second queen confined in a single division is not too cramped. With an eight-frame hive there is that difficulty.

I have briefly described this hive so that my subsequent remarks may be more easily understood. Any bee-keeper can work out much the same system if he uses for his brood-nest two sets of English shallow frames in an English hive with interchangeable parts, such as the "W. B. C." hive.

Mr. J. M. Ellis, of Ussie Valley (whose references on page 26 of the B.B.J. to some correspondence I have had with him occasioned this communication), uses a hive with close-ended frames of very similar depth to the one I use, and has found it most satisfactory for his purposes.

(Continued next week.)

REVIEWS.

Die Rassenzucht der Schweitzer Imker. By Dr. U. Kramer (published by Paul Waetzel, Freiburg i. B., Germany. Price 3s. 2d., post free).—This is the fourth edition of "Race-Breeding by the Swiss Bee-keepers," which has been revised and brought up to date by the author, who is the well-known President of the Swiss Bee-keepers' Society and the leader of the movement for the improvement of the native race of bees. In this book we have the experience of a number of men who have for some years worked with a definite object in view, and have by mutual interchange of ideas achieved considerable success in producing a hardy race of bees little inclined to swarm, consequently yielding a large harvest of honey. The author gives the reasons for the degeneracy of native races, and shows how by proper feeding and selection of breeding stock the race can be improved in every way. The work is crammed full of useful information, and is profusely illustrated, and we recommend those who know the German language to add it to their libraries.

One & All Gardening, 1910. Edited by E. O. Greening (London: Agricultural and Horticultural Association. Price 2d.).—This interesting annual has now reached a fifteenth issue, and its popularity remains unabated, a first edition of 100,000 copies being called for. The 128 pages are full of valuable matter by writers of eminence in the horticultural world. The editor gives an illustrated article on garden homes in connection with profit-sharing co-partnerships of industry at home and abroad. Other notable articles are on "American School Gardens," "Walking-stick Insects," "Gardening without Soil," "The Outdoor School," "Legends of Plants," and the much-discussed subject of "Nitro-Culture." There are also numerous short cultural articles on many garden plants.

Correspondence.

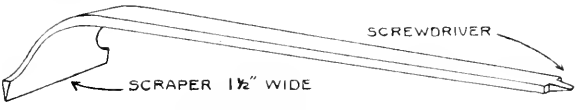
The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SOUTHERN SNATCHES.

[7739.] In B.B.J., vol. xxxvii., p. 254, "D. M. M." described a useful scraper, and at the same time threw out the suggestion that there might be others who could also furnish descriptions of tools or appliances they found useful in the apiary.

There is no doubt that a good scraper is essential at certain seasons, but what the average bee-keeper wants is a tool with a combination of useful purposes, and I think most of these will be served by the tool a rough sketch of which is given below. It can be made at a trifling cost by any local smith (an old file furnishing the necessary material), one end being flattened out the necessary width to act as a scraper, which is curved as shown in the sketch. This end will also be found a useful lever and will not scratch or injure the wood; it can also be used as a hammer to drive tacks or for other purposes.

The narrow end is made into a screw-driver, which is an indispensable tool to every bee-keeper. The curve at the other end will give the necessary grip for using the tool with force. This screw-driver end can also be made to act as a spacing-tool for those who do not use metal ends on frames, and if shouldered as shown it can be made to give any of the spacings required. This feature should commend it to those who aim at accurate spacing. As this tool is not intended to take the place of "D. M. M.'s," but rather to be used as a general-purpose tool, it will be found handier not to have the scraper end too wide—say 1 in. to 1½ in.



A USEFUL HIVE-TOOL.

In a subsequent contribution (page 304) Mr. S. Soal suggests the use of a taper frame, which he considers would offer facilities for quicker manipulation. I hope this suggestion will never be adopted to the extent that I, for one, will not be able to secure the old "standard." Here is a little tip I have found valuable for speedy manipulation and reducing to a minimum the chances of killing bees.

Before nailing my frames together I provide myself with a quantity of fine wire staples (the finer the better) ½ in. long, a piece of flat iron $\frac{1}{16}$ in. thick, with a hole drilled in one end that will fit easily over the staples. On the outside of end bars, about ⅜ in. from the bottom bar, I insert a staple running slightly out of line with the grain of the wood. The hole in the piece of iron is dropped over the staple, which is driven home as far as the iron guide will allow. As most bees are crushed between the sides of the hive and the end bars, it will be seen that the above simple arrangement prevents this, as the contact with the sides of the hive is only at the staple, which is a very small point indeed. Every frame in my apiary, whether shallow or standard, I have fitted thus, and I consider that for speed in manipulation, confidence in handling, and protection to bee-life the extra trouble is repaid the first time the frames are moved. Another staple can be inserted half-way up the bar also, to prevent the frame from coming in contact with the hive near the top, but this is not necessary with ordinary care.

Late Mating.—On page 347 Mr. L. S. Crawshaw, on this question, suggests the possibility of a drone-laying queen proving fertile after all, and asks for data in support of his supposition. I am glad to be in a position to give him the very information he seeks for, if he will accept my word for it. The two instances given below I am prepared to vouch for as being under my closest observation twice daily, sometimes oftener.

In the beginning of the season of 1907 (September), a short time after settling in my present abode, I was the possessor of one solitary hive (not my first acquaintance with the "busy little folk" by any means: we had sworn life-long friendship in the Emerald Isle twenty-five years previously). This hive was preparing to swarm, and in order to prevent their absconding I clipped the queen's wing. They swarmed, however, perhaps more than once, in my absence, with the common result that they killed the old queen because she could not accompany them. Having three queen-cells still left in the hive, I concluded things would go on all right, but they did not. As soon as the first queen hatched out the swarm and queen absconded. In order to make assurance doubly sure, I made up a nucleus of two frames, and gave them one of the two remaining queen-cells. In a very short time both queens hatched, and duly commenced to lay; but judge of my surprise and disappointment when I found the first brood capped in the stock-hive were drones in worker-cells. And daily as I opened my hive I found a fresh batch of drones capped over. The very same thing happened in a much smaller degree in the nucleus, and I considered the case hopeless, but had no means of re-queening either. If ever bees were watched and studied with an eagerness bordering on despair those two hives were. Not until a week had passed, on the seventh day after the first drones were capped, did I find a single worker-brood on any of the frames, though the stock had three or four frames of nearly solid capped drone-brood by this time. In the nucleus, although the queen did not lay very rapidly, the brood was all drones also till the seventh day, when she,

too, started laying worker-eggs, and built up in a very short time one of the finest stocks that could be imagined. Although I have reared a good many queens of the same strain since that time I have had no recurrence of drone-breeding, but I have reason to believe from what I have seen in manipulating hives for my acquaintances that such is not uncommon in my part of Natal. There is not a shadow of suspicion that fertile workers were responsible for the drones in the above instances.—HARRY MARTIN, Dannhauser, Natal.

BRITISH BEE-KEEPERS' ASSOCIATION

[7740.] Why are Englishmen so slow in giving a decision on any great matter? I think it is part of our principle or habit, the strong stubborn nature which has brought England to her greatness. Has not this discussion gone on long enough to thrash the matter out? Is the Association necessary? As a working man, I think the reports of the Council meetings in the B.B.J. are as good reading and as instructive as, if not more so than, much of the correspondence; and if the Association meetings were held in the provinces (unless at an agricultural show), and I had the privilege of attending, I do not think I would waste a day and expenses for what little benefit I should get, beyond what the B.B.J. publishes. But how can we alter things for the benefit of our craft? The first thing I would do would be to get a Foul Brood Bill passed and powers for the Association to insure bee-keepers against foul brood and Isle of Wight disease. Yearly premium, say 1d. per hive, minimum 6d.; maximum compensation: 5s. per hive, or bees 2s. 6d. (or half-value, say 6d. per lb.), 2s. 6d. brood-nest. No insurance to be taken or compensation paid on outer covers, either of straw or wood, which may be ordered to be destroyed. All cottagers should pay a minimum sum of 6d. to the county association (exclusive of insurance); farmers, &c., double the amount; for which they should receive one visit from an expert sent by the association to give advice, and who would be entitled to give a certificate of health or report any disease; any further advice to be given on receipt of stamped addressed envelope and paper. All experts and honorary members should also be members of the central association. The minimum subscription should be, for cottagers 2s. 6d., others 5s., giving privilege of attending Association meetings or visiting the Association's apiary, admittance to the library, &c. If we could get Royal patronage? I do not think there are many who could afford it, and they would grumble at the higher fees. With regard to the Council holding meetings in the provinces, do we not often get our leading men at almost all the larger agricultural shows? And if the lesser ones with longer tongues cannot afford to go to London, any more than I can, surely a meeting could be arranged at these shows. There is much to be said about disease. I know bee-keepers who always keep the old stocks uncared for, a home for hundreds of moths, woodlice, &c., and sometimes even invaded by mice. Such hives are left to breed from, unopened and uncleaned from year to year, and any swarms that issue are smothered (perhaps the best thing for them), if heavy, after the harvest; the wax, being new, is then of little trouble to melt. For my part, I think I would rather put up with a bombastic official of the law than have foul brood or Isle of Wight disease. — A REGULAR READER, Birstwith.

BEE-KEEPING IN SOUTH AFRICA.

[7741.] Having seen an article on "Bee-keeping in South Africa" in the B.B.J. of December 30, 1909, it occurred to me that the opinion of Mr. Frederic Sworder, expert to the South African Bee-keepers' Association, would prove interesting to some of your readers. I might say that I wrote asking whether it was possible to make a living from bee-keeping alone, or combined with fruit-growing and poultry-keeping. When answering my queries he kindly gave me permission to use his letter as I deemed fit. I therefore send you a copy, believing that it may prove useful and interesting to your readers.—B. BLACKBOURN, Ramsgate.

8 and 9, Raine's Buildings,
Eloff Street,
Government Square,
Johannesburg.

DEAR SIR,—In reply to your letter of September 13 just to hand, as far as the Witwatersrand district is concerned it cannot be termed a good district for bee-keeping, although some localities in it are giving good returns; for instance, in spite of last year being an inferior one, a bee-keeper of only two years' experience from nine hives made £30, while another novice from four British hives made £18, whereas just a few miles distant bees were scarcely able to support themselves.

Zeerust, on the railway due west of Pretoria, is known to be a good district. Rustenburg, on another branch line west of Pretoria, is also quite good; in fact, almost anywhere north of the Magaliesburg Range (pronounced "Maholisburg") is considered good, and in all cases with a honey-flow of good quality extending from July to December. Where gum plantations with trees of over ten years' growth

are in existence, dark honey can be secured from their blossoms in mid-winter and spring in fair quantities, although it is not so saleable as the light honey, which latter is obtained from the veldt flowers and the bush.

We have in South Africa a bee indigenous to the country, undoubtedly possessing a strain of Italian blood. Besides this race there is another bee, a little black one with only one yellow band, which is quite pugnacious and an inferior honey producer. This race it is advisable to leave alone, as better characteristics regarding temper and working qualities are met with in the former mentioned race.

In good districts, and there are numbers more than I have mentioned, bees have brought home a surplus of 40 lb. to over 100 lb. per hive with only ordinary management, but with care and attention much better results might be secured.

Prices range from 1s. to 2s. 6d. per lb. section or 1-lb. bottle at the S.A.B.K. Association's depots, several of which are opened in the principal centres.

Owing to the comparatively mild and short (three months) winters bee-keeping is made easy, for very little feeding is required, and the most important item is that there is "no foul brood" in South Africa."

Having handled thousands of stocks and undertaken much work of an ever-varying description with bees during the last seven years, I can truthfully say that on the whole I do not wish to handle a better bee; but that it is still capable of improvement by selection there is no doubt. Where food is plentiful it builds up very quickly, as many a novice knows to his cost, and, like most races in semi-tropical countries, is given to swarming.

Although the prices of the best British appliances in South Africa are naturally dearer than in England, for they have to travel 7,000 miles by sea and land, still there is unquestionably a larger margin of profit than in any other continent, and that with an increasing demand.

Should the price of honey fall to an average of 1s. per lb., bee-keeping on a fairly large scale would even then pay.

At present the industry is just emerging into being, and very few are carrying it out on extensive lines, yet there are great possibilities ahead.

A British hive completely furnished for bees costs about 50s., and usually in good districts, where bees abound, the latter can be had for the getting.

If you could combine fruit-growing with poultry and bees in one of the warmer districts, and not too far from rail, with careful management you should be able to get a living. With the first you would have to wait three years for a return, with incidental expenses accruing; in the meantime much could be derived from poultry and bees, preferably the latter for the quickest return; but you must bear in mind that South Africa, like every other country, is not alone in its set-backs.

Piet Retief, on the Natal border, is good for bees; Cape Colony also possesses some good districts; but you will observe that my experience is principally in the Transvaal.—Yours faithfully,

FREDERIC SWORDER.

HONEY PRODUCTION IN SWITZERLAND.

[7742.] Enclosed is a cutting from the *Gazette de Lausanne* of January 10, giving some account of last season's honey-harvest in Switzerland, with a few other details, which I thought might interest your readers if you have room for it in B.B.J. —G. HULBERT, Worcester.

The following is a translation:—

"Bee-keepers consider the honey-harvest of 1909 as generally satisfactory, although, as a matter of fact, bees were only able to store surplus in the months of July and August. Swiss bee-keepers have organised a plan of collecting statistics of returns, which is in operation in sixteen cantons, and which has furnished the following results: 46,171 hives have produced 833,644 kilos of honey, or 18 kilos (39½ lb.) per hive. There are 240,000 colonies in Switzerland, and if one reckons according to the poor returns of Western Switzerland, which showed an average of 15 kilos (33 lb.) per hive, this would make 3.6 millions of kilos. At 2 francs a kilo the returns amount to 7,200,000 francs, or £288,000. Deducting about 2,000,000 francs for the cost of upkeep of these 240,000 hives, there remains a profit of 5,000,000 francs, or £200,000. The best returns in 1909 were from the canton of Lucerne, where 7,873 colonies produced 193,020 kilos of honey, an average of 24.5 kilos (55 lb.) per hive. In the canton of Bern 9,308 colonies produced 175,265 kilos of honey, an average of 18.8 kilos (40 lb.). The poorest returns come from Schaffhausen, and show an average of only 5 kilos (11 lb.)."

PRESS CUTTING.

BRITISH BEES AND EXOTIC FLOWERS.

SIR,—One of the most remarkable facts which confront the student of our native bees is the way in which they take to flowers introduced from foreign countries. For it might surely be *a priori* expected that, having been used for countless generations to native flowers, a knowledge of these would become hereditary, and that British bees would distrust foreign species. And still less would we expect to find them taking readily to

exotics if we held the view generally received by naturalists that flowers visited by bees are in form and colour the outcome of their selective action. Yet it is a fact that bees visit freely a number of introduced plants in our gardens, and apparently find them as satisfactory as those which they are supposed to have themselves evolved.

I have before me at the present moment an interesting example. Flowering in my garden for the first time is a species of linaria (*L. dalmatica*), a showy plant with numerous tall spikes of yellow flowers. I have never seen the species before, and feel quite sure it is not grown in any of the gardens in the neighbourhood. Yet the bees have found it out, and this morning a worker of some species of humble-bee was diligently working the yellow blossoms.

Another year I had a similar experience with certain annual species (*Linaria bipartita* and *L. marocanna*). These have pretty flowers of various shades of purple and white. To them, quite new, I believe, to the neighbourhood, a very interesting species of wild bee used to come daily. This bee has no common name, but is known to science as *Anthidium manicatum*. It is easy to recognise, for it is the only one of our wild bees in which the male is conspicuously bigger than the female. He comes and takes possession, so to speak, of a clump of linaria, ready to keep off all rivals, and waits for the female. Flashing about with almost inconceivable rapidity, he occasionally just touches a flower, and presumably wets his tongue with nectar. The smaller female rapidly works the linaria flowers, unheeding his presence. So quick are the movements of these bees, especially of the male, that other bees seem slow in comparison.

Now, if it were true that this species of bee had been sufficiently constant to any species of flower to be the agent in evolving it, how can we account for it thus taking readily to a different species evolved elsewhere and under different conditions? And if it be urged that these linarias are more or less like our native species, we may point to other garden flowers eagerly visited by bees, and totally unlike any of our native plants. Notable among these may be mentioned the nasturtium, canary creeper, Himalayan balsam, lilac, laburnum, fuchsia, single dahlia, and others.—G. W. Bulman, M.A., B.Sc., in the *Field*.

JANUARY RAINFALL.

Total fall, 3.26 in.
Above average, .80 in.
Heaviest fall in 24 hours, .47 in. on 18th.
Rain fell on 22 days.

W. Head, Brilley, Herefordshire.

WEATHER REPORT.

Westbourne, Sussex.
January, 1910.

Rainfall, 3·46 in.
Above average, 1·01 in.
Heaviest fall, 0·61 in. on 23rd.
Rain fell on 18 days.
Sunshine, 57·4 hours.
Below average, 11·4 hours.
Brightest day, 30th, 5·6 hours.
Sunless days, 12.
Maximum temperature, 52° on 10th, 14th, and 16th.
Minimum temperature, 17° on 27th.
Minimum on grass, 13° on 27th.
Frosty nights, 10.
Mean maximum, 44·5.
Mean minimum, 34·8.
Mean temperature, 39·6.
Above average, 2·1.
Maximum barometer, 30·567 on 7th.
Minimum barometer, 28·714 on 24th.

L. B. Birkett.

Queries and Replies.

[3993.] *Beginner's Experience and Queries.*—Allow me to thank you for the feast of good things so liberally bestowed on all through the B.B.J. and *Record* during 1909. I am sure if the year was the worst on record for obtaining honey it was not due to a lack of tuition, for with such a strong arm at the helm and so sturdy a crew, it is clear that we must look for other causes if progress has not been made. With this in mind I would ask your advice. I began with one stock last February, and, being afraid of losing the swarm when it came off, I made an artificial one, and thus have two stocks at present in Abbott's "W. B. C." hives. I only got 6 lb. of honey, and had to use half a hundredweight of sugar to feed them up, as I have to rely principally upon heather, which failed completely last season. This was certainly discouraging to a beginner, but to show how I am sticking to it I have read up all my back numbers of B.B.J. and have studied the "Guide Book" during this winter. I should like to say that there is no better time to read and reflect on the articles, which then appear at their best, rather than when they are written, for in the busy season one hardly has time to read and take them in properly, and to do them the justice to which the authors are entitled. I have also bought two more new hives of the same make, and wish to try the plan recommended by Colonel H. J. O. Walker on page 224 of B.B.J. for June 10, 1909. 1. Would this be a good plan to follow considering that heather is my principal honey source? We have also whinberries, wild gooseberries, and such like, but no clover or apple blossoms, as we are on the side of the hills. 2. I spread the combs by mistake, putting alternately a wide and a narrow end before feeding

up last October, so the bees lengthened out the cells instead of taking the syrup down. When I noticed it I closed up the combs, and should like to know if there is likely to be any difficulty in the queen laying in the longest cells? 3. Would I be right in cutting them down? 4. I understand that it is not easy to get bees to build out combs in the fall of the year, and as I have only heather to depend upon what would be the best plan to have combs built in readiness for it? Thanking you in anticipation.—H. F., Monmouth.

REPLY.—1. This plan should answer your purpose very well. 2. The queen will not lay in the lengthened cells, but the bees will cut them down if the combs have been closed up, as they generally keep a clear passage between them, sometimes leaving brace-pieces attached. 3. Yes, you should cut them down to the level of the frames. 4. You can get your bees to build out combs in summer by giving them frames of comb-foundation in place of some of the old combs.

Notices to Correspondents.

A NOVICE (Upper Norwood).—*Moving Bees.*—If you confined the bees with perforated zinc over entrance for three days after moving them it is not surprising that you have found about fifty dead ones. Bees should be allowed free flight immediately after removal, for this agitates them, causing them to fill themselves with honey, and they require a cleansing flight. The bees would return to the spot from which you moved them, unless you took proper precautions to make them mark their location. Bees appear quite normal.

F. H. F. (Gloucester).—*Stimulative Feeding.*—1. In most places March is quite soon enough to overhaul stocks, although with care and taking proper precautions, as stated on page 213 of "Guide Book," it can be done in February. If your apiary is situated in an exposed position leave the overhauling until March, and stimulative feeding by uncapping cells may be commenced then, bearing in mind that it takes about six weeks to build up a colony to sufficient strength to take advantage of the honey-flow. 2. May is the best month for removing winter packing in most districts, as it is in the spring months that bees suffer most from the cold; therefore they should be well protected at this time. The recommendation you refer to is for replacing frames removed in the autumn; this can be done in March or April. Transferring to clean hives will not interfere with bees storing from fruit blossoms, as it only takes a few minutes to do. 3. Naphthaline if pure will do no harm if used in the proportions mentioned in "Guide Book." There is no doubt that a great deal of impure stuff is used, which is not only injurious to bees but also affects the flavour of the honey. 4. Yes, bees often are restless if short of food, but when they have plenty of stores there must be other reasons for their being so. 5. We thank you for offering to send us weather notes from your district, and we should be glad to have them. The humidity returns deduced from dry and wet bulb thermometers might be useful as showing some connection with the secretion of nectar. There is much to learn in this respect, and systematic observation would be very useful.

F. W. (Mellor).—*Honey Sample.*—The honey is of inferior quality, gathered from mixed sources, including fruit-blossoms. It has no distinctive flavour, and contains neither heather nor clover. It is tainted with a small quantity of honey-dew, but is quite wholesome for food, though not sufficiently good to be classed as a table honey.

RUSTICUS (Hackney).—*Commencing Bee-keeping.*—Unless you can get help to look after your bees, it would be very little use your starting with any expectation of making a profit, if you can only give them attention once a month. During the honey season bees require frequent attention as regards not only swarming, but also giving and removing supers at the proper time, and many other manipulations, without which success is impossible. If you will consult the "Guide Book" you will see what is required to enable you to succeed.

LEX (Wrexham).—*B.B.K.A. Insurance Scheme.*—The insurance is 1d. per hive on the maximum number of hives kept; minimum premium, 9d. Non-members of B.B.K.A. or affiliated associations have to pay a registration fee of 6d. You have made a mistake in supposing that there was a 1s. hive insurance and that there is only compensation of 1d. per hive. The compensation is according to value, not exceeding £30 in the aggregate, and in one case £28 18s. 11d. was paid for the value of a horse killed by the stings of bees. You can obtain particulars by applying to the secretary of the B.B.K.A., 8, Henrietta Street, Covent Garden, London, W.C.

R. F. S. (Colchester).—*Clover Districts in Essex.*—The secretary of the Essex B.K.A. is Mr. G. R. Alder, Rawreth, who could give you the information you require. Mr. A. W. Salmon, Cashfield, Chingford, Essex, is the secretary of the Suffolk B.K.A.

J. C. A. (Grangemouth).—*Diseased Bees.*—The bees sent are badly affected with dysentery.

H. B. (Brentford).—*Dysenteric Bees.*—Your bees are suffering from dysentery, probably caused by bad food. You have done right in changing the hive, but you should have reduced the number of frames and closed up with division-board, so as to reduce the space to enable the cluster of bees to keep warm. You should also have given the bees candy or a comb of sealed stores consisting of good honey. Much of the honey last season contained honey-dew, which is not good food for winter.

R. B. R. (Rochdale).—*Bees Stinging.*—There are many reasons why bees sting some persons and not others. They are very sensitive to odours, and some—such as bad breath caused by alcoholic drinks or otherwise, perspiration, and smell from stables—are obnoxious to them. Wearing gloves irritates bees, and at best with them it is a clumsy way of manipulating frames. The odour from one sting on the gloves causes a good many bees to sting also. We would recommend you to discard gloves and rub a few drops of oil of wintergreen on your hands before manipulating. Also use the smoker judiciously, keeping in mind that a little smoke is more efficacious than a large amount, and before taking off the quilt give the bees time to fill themselves with honey.

Back to the Land (Cornwall).—*Starting Bee-keeping.*—1. Beginners are recommended to commence with swarms so as to enable them to start from the beginning, and also because until they become expert at recognising diseases they run the risk of introducing them into the neighbourhood. 2. For the reason that with all their good qualities the native race is more suited to its country and is the one employed by all the large honey-producers. 3. You will find something of use in every book, and no doubt also in the one you mention. 4. There is no need for a swarm-preventing chamber, and very few use it now. 5. The "Combination" hive was so named because when it was first introduced it was intended to work frames of sections at the back of brood-nest as well as racks of sections on the top. This plan has long since been given up, but such hives are now used for queen-rearing (see "Guide Book," page 130, for illustration). 6. Very few "Wells" hives are now employed, and most honey-producers use a ten to twelve frame hive of the "W. B. C." type.

Novice (Leicester).—*Mortality of Bees in Winter.*—1. This depends upon what sort of bees went into winter quarters. If they were young and bred in the autumn they should live through the winter and begin work in spring. Old bees will be dying off all through the winter months, and seldom survive until spring. The proportion of dying bees will be regulated by the number of each sort in the hive. 2. During winter bees do not fly far from home, and do so generally during sunshine for cleansing purposes. Your hive facing south induces them to come out when the sun shines. 3. You must on no account lift out the frames now, and the bees should not be disturbed from the time they are prepared for winter until the end of February (see "Guide Book," page 192). 4. If the candy is given without disturbing the bees it will not cause trouble. The amount consumed will depend on the strength of the colony and on their requirements. Lift the quilt when the candy is all consumed and give another cake until they are able to get nectar outside.

A. R. P. (Taunton).—*Queen-excluder.*—There is no necessity to frame the excluder to give a bee-space between frames and racks. Place the excluder direct on the frames with the slots running at right angles to them.

F. W. and S. J. A. (Coleford).—*Moving Bees.*—If you will refer to page 120 of "Guide Book" you will find it stated that in such a case as yours stocks "should not be moved more than 2 ft. or 3 ft. each day, not reckoning those on which bees are not flying." It is a pity you took the advice of the old bee-keeper and did not carry out instructions in "Guide Book."

Ch. J. (Beckenham).—*Perished Bees.*—Comb sent only contains one cell of brood which has the appearance of incipient foul brood. The rest of the comb contains honey and pollen. Bees seem normal, and appear to have died from starvation.

W. G. C. (Chelsea).—*Spanish Journals.*—1. There are two Spanish bee-papers—*La Gaceta Apicola de España* and *La Apicultora España.* You can obtain particulars from some of the foreign publishers. Try Asher and Co., 13, Bedford Street, Strand, W.C. 2. Of manuals there are "Guia del Apicultor Britanico," a translation of the "Guide Book" by E. de Mercader Bellock, and "Guia del Apicultor Español," by F. F. Andreu, either of which could be ordered through above publishers. 3. *Rhododendron maximum, Kalmia hirsuta, Kalmia latifolia, Azalea nudiflora, Andromeda mariana,* and yellow jasmine yield poisonous honey. Rhus and cornel are harmful to bees, and honey from the above-named plants, if plentiful, is injurious to young bees.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Influence of Odours on Bees.—M. Philomel, writing on this subject in *L'Abeille de l'Aisne*, says that bees smell the odour of honey at a distance which would make it quite imperceptible to us. It is owing to this highly-developed sense of smell that they are able to distinguish rapidly if a certain flower contains only a few drops of nectar. Certain other odours attract them, such as, for instance, balm, and for this reason some bee-keepers soak a pad of cotton-wool with essence of balm, which they fix on a shrub, to attract swarms to settle on it. On the other hand, there are strong odours, such, for instance, as smoke, which repel bees. For this reason the bee-keeper uses smoke to subdue his colonies. There are other odours which are extremely disagreeable to bees and irritate them. Thus there are persons whose breath and perspiration are insupportable to these insects, and who may not approach a hive without running the risk of being stung. Others, on the contrary, can pass among hives without the slightest danger.

Disinfecting Hives.—Dr. A. Maassen recommends that wooden hives which have contained bees affected with foul brood be scoured with a boiling solution of 1 lb. of soda to one gallon of water. The hive should be scraped with a knife and scrubbed with a stiff brush. After doing this thoroughly, the sides must be slightly charred with the flame of a benzine lamp, taking care that the flame gets well into the angles. He says this plan is much more effective than that of using the usual disinfectants, such as chloride of lime, carbolic acid, lysol, or formalin. Veils, gloves, &c., should be boiled in the soda solution for half an hour.

Count Cav. G. Barbo.—The death of this noted bee-keeper and agriculturist is recorded in *L'Apicoltore* of Milan. Although nearly seventy years of age he was full of vigour, but a severe illness brought on the end sooner than was expected. Count Barbo was in 1867 one of the founders of the Italian Central Association for the encouragement of bee-culture, and of its official journal *L'Apicoltore*. He was for many years, first vice-president, and then president of the association, and on the death of Count Resta he took an active part in editing the journal and in advocating the rational culture of bees, which up to that time was unknown in Italy. When, owing to his other occupations, he gave up this work, he was made honorary president of the society. He was not only a noted bee-keeper, but also an enthusiastic agriculturist, and although a wealthy man he himself superintended the work of a large domain, where on a model farm the country people were taught the most modern methods. He wrote "L'Apicoltura in Italia," a book for bee-keepers, and "Operazioni Apistiche Mensili o Promemoria ai Novizi Apicoltori." In 1872 he published his experiences respecting parthenogenesis, and he was also able to confirm the fact of there being laying workers, and in watching them lay he observed some with pollen on their legs. On dissection eggs were found in the ovaries. As a keen microscopist he studied the anatomy of the bee, and in 1875 "L'Ape, sua Anatomia—suoi Nemici" was produced, this consisting of lithograph pictures of Count Barbo's studies drawn by F. Clerici. In 1901 this work was revised and brought out under the title of "Atlanti di Apicoltura," the descriptive text being written by A. de Rauschenfels, the octogenarian editor of *L'Apicoltore*.

The same journal announces the death of another of the founders of the Central Association, Count Emilio Boromeo, who died a few days after Count Barbo.

Cheap Bees.—In the *Badische Biene* it is stated that a certain wood on the Rhine has long been favourably known from the fact that every year many absconding swarms settle there as they come from Schwarzwald, and are not able to cross the Rhine. The bee-keepers in the neighbourhood, being very enterprising, place their empty hives in this wood, and are generally able to remove them in the autumn tenanted by good stocks.

Preserving Fruit in Wax.—We find the following instructions for preserving fruit in wax in *Practischer Wegweiser*:—Gather the fruit with its stalk just before it is quite ripe, taking care not to bruise it in any way. Then, holding it by the stalk, dip it into molten wax, being careful that this is not too hot. Lift it out quickly, and hold it for a few seconds until the wax cools, when it can be stored in a cool, dry place until wanted. It is stated that fruit preserved in this way will be found quite good for six months. This method may be employed for choice pears, the thin layer of wax preventing germs from decomposing the fruit.

Swiss Race of Bees.—Bees of this race, improved as we have on several occasions mentioned by selection, through the persevering efforts of Dr. Kramer, are beginning to be appreciated in other countries. We read in the *Bulletin de la Société Romande d'Apiculture* that the Bee-

Society of Wiesbaden has decided to continue the rearing of these bees in view of the good results obtained.

GLAMORGAN B.K.A.

ANNUAL MEETING.

The annual general meeting of the above took place at the Occidental Café, Cardiff, on Saturday, February 5. The weather was not good, and, in the absence of General Lee, Mr. J. Jenkins was voted to the chair.

The minutes and correspondence having been dealt with, the chairman moved the adoption of the report and balance-sheet. The report showed, he said, how unfavourable the past season had been to bee-keepers, whose crops in many instances were either small or worthless. There had been forty-one new members enrolled. Through the liberality of the County Council, two tours had been made by the Rev. H. Morgan and twenty lectures given by Mr. Wm. Richards. The percentage of foul-brood cases was reported to be small.

The balance-sheet was a creditable one, in the chairman's opinion, as it showed a revenue of £176 2s. 7d. and a credit balance of £9 17s. 6d. The report and financial statement were passed *nem. con.*

Votes of thanks were unanimously passed to the Glamorgan County Council for their grant of £100, to the Cardiff and County Horticultural Society, and to the retiring officers.

The following appointments were made:—President, the Earl of Plymouth; vice-presidents, as last year; auditor, Mr. John Jenkins; chartered accountant and treasurer, Mr. F. A. Hibbert.

Mr. Richards was urged by several speakers to reconsider his intention to resign the secretaryship, the chairman remarking that it was not too much to say that the association owed its present important position to his care, work, and zeal. Ultimately, Mr. W. J. Wiltshire was unanimously elected hon. secretary.

An executive committee of twelve was then formed.

A discussion on the proposed reorganisation of the B.B.K.A. was entered into, few speakers being in favour of the scheme submitted. The matter was left to be dealt with by the committee.

Refreshments were provided through the kindness of General Lee.—W. J. WILTSHIRE, Hon. Sec., Maindy Schools, Cardiff, February 11.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of January, 1910, was £1,076.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

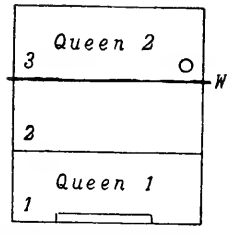
A TWO-QUEEN SYSTEM.

SOME REMARKS ON ITS ADAPTABILITY FOR A HEATHER DISTRICT.

BY "MEDICUS," NEWCASTLE-ON-TYNE.

(*Continued from page* 56.)

The simplest and safest method of introducing a second queen to a colony was pointed out to me by "Cruadh," whose name used to be known to bee-keepers, to whom I am greatly indebted. Having a spare queen, go in the morning to the colony to which this second queen is to be introduced, and remove from it two or three combs of sealed and hatching brood, and place them in a spare brood-chamber division, in the front of which a ½-in. hole has previously been bored. Cage the new queen on one of the combs, and shake in enough bees to care for the brood, but care must be taken that the original queen is left in the original brood-chamber. Having filled up the empty spaces in the original colony with foundation or drawn combs, place over it a frame of wire gauze, and on this stand the nucleus just formed with its new queen. If this manipulation is performed in flying weather the new queen can be liberated with safety on the following morning, as all the older bees will have escaped by the upper entrance and have returned to their old queen below, and only young queenless bees will



1. Original brood-chamber. 2. Drawn combs. 3. Spare brood-chamber or nucleus; O ½-in. hole, *W* wire gauze.

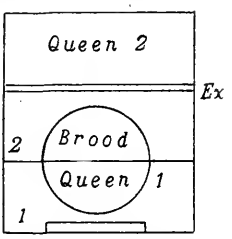
be left. The combs, however, should be separated on opening the hive, and a few minutes allowed for any of the older bees still left to take flight. Within twelve hours the newly-liberated queen will generally have begun laying.

In a few days the wire screen can be removed, its place being taken by a queen-excluder, and the upper entrance can be closed.

As an additional precaution this change can be made towards evening, and a sheet of paper placed over the queen-excluder when it is put in position. The bees take some hours to gnaw through and remove the paper, and the mixing of the bees, therefore, takes place more slowly. When the nucleus is lifted from its position on the top of the main part of the colony it should be disturbed as little as possible.

As it only contains young bees no subjugator is necessary.

When the second queen is once safely introduced, I have never found any manipulation of the colony, however extreme, result in "balling" or injury to either queen.



Ex. Excluder in place of wire gauze. The circle shows position of brood.

(The two queens need not be of the same breed. A British queen and an Italian queen unite as easily as two British or two Italian queens.)

The following method of management seems worthy of further trial by heather-honey producers. It can, of course, be carried out in a much simpler form, although the full benefit of two queens will not be obtained. I find that by purchasing a queen at the end of May (the cost of which an extra 3 lb. or 4 lb. of heather honey will cover) a colony can be sent to the moors much stronger in bees than any single-queened colony, and at the same time one of the queens can be left at home with enough brood to build up into a good wintering colony.

At the end of May a queen is purchased and is introduced to a colony which already has a queen in the way described above. (If a queen is purchased from Italy, one of the current year can often be obtained.) As the upper queen has plenty of room, and as her brood-nest has the full benefit of the warmth from below, she extends it very rapidly. If the colony is examined in two or three weeks it will be found that most of the honey is being stored in the upper brood-nest, and the pollen in the lower. To equalise matters, and to obtain the maximum result, it is an advantage to alter the relative positions of the two brood-nests every two or three weeks, placing the upper below the excluder, and the lower above. Whether it is due to the opening up of the hive (and at the present time there is much discussion on the advantages of shaking), or to the brood-nest with most pollen now having honey stored in it, and to the brood-nest with honey receiving a fresh supply of pollen, it is difficult to say; but about the result there is no doubt. In my own district the honey-flow is very slight and intermittent until clover yields, and such a change of position is essential for good results, as a stoppage of supplies owing to bad weather, if it lasts a few days, causes breeding in the lower brood-nest to be much curtailed.

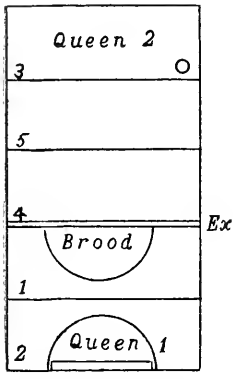
This rearranging of the brood-nests sounds a much more formidable and lengthy proceeding than it is. It takes a much shorter time to do than it does to describe, if a hive adapted to the purpose is used. As bee-keepers have complained to me that they find it difficult to do this without causing an uproar, and at the expense of many stings, it may be as well in a few words to describe my method. A spare bottom-board is placed near the hive to be manipulated. The bee-keeper with a screw-driver gently loosens the upper brood-nest from the queen-excluder, which is mounted in a wood frame, without disturbing the occupants (the lower brood-nest can be liberated from the bottom-board at the same time). The upper brood-nest is now lifted gently off from the queen-excluder and placed on the new bottom-board *without the use* of any smoke or other subjugator. A carbolic cloth which is in readiness, and is large enough to cover the whole of the frames, is placed quietly over the exposed queen-excluder, and the hive, picked up by its bottom-board, is lifted to one side without jarring. The hive on the new bottom-board is next lifted into its place. The queen-excluder is now removed, and the top of what was the lower part of the colony is covered over with a piece of calico or enamel cloth, according to the preference of the bee-keeper. The cover of the hive is now removed to its new position, and after a momentary application of the carbolic cloth the excluder is placed in position on what is now to be the lower brood-nest. The carbolic cloth being removed, what is now to be the upper brood-nest is gently lifted into position without trouble. If smoke is used, or the colony is jarred before the two brood-nests are separated, the bees are on the defensive, and the bee-keeper is aware of it as soon as ever he lifts the upper division off the queen-excluder. The rest of the manipulation then becomes a bee-smashing performance.

When the two parts are separated without previous disturbance, no bee takes wing for nearly a minute, and thus there is time enough allowed to put the part lifted off into position and to apply the carbolic cloth.

A carbolic cloth prepares the way for placing one division on another much better than smoke, and acts over the whole area.

When the clover-flow begins the upper brood-nest is lifted off the queen-excluder and a super, or supers, put in its place. It is next covered with calico or enamel cloth, and the upper brood-nest is re-

placed on the top of all, and an entrance provided in the front. All the flying bees from the upper brood-nest will, on their next flight, return to the old entrance and augment the honey-gatherers below. At the end of a few days, if the flow continues good, and it is desired to divert more bees from the upper colony, the top colony can be placed on a floor-board by the side of the main colony. The flying bees will return to the position of the upper entrance, and, finding that there is no inlet, will track down to the



1 and 2. Position of brood. 3. Upper brood-nest, with entrance O. 4 and 5. Supers. *Ex* Excluder.

lower entrance. Towards the end of the clover-flow the upper brood-nest can be returned to the top again, and when the supers are removed the upper entrance can be closed, and the hive will thus return to its former two-queen state. The result of these manipulations is to throw all the older flying bees from the upper brood-nest into the supered part, where they are most wanted. By the removal of the majority of the honey-gatherers it prevents the upper queen from having her brood-nest choked with honey, and at the same time sufficient honey comes in to stimulate brood-production.

(Concluded next week.)

AMONG THE BEES.

OUR FRIEND THE ENEMY.

BY D. M. MACDONALD, BANFF.

Bee-keepers should now keep their eyes wide open and watch closely on bush, shrub, and tree for signs of the development of the aphides. The eggs laid in autumn have survived the winter, and will shortly hatch out. Those now produced have the power of laying eggs, but Nature has provided a much surer and more expeditious way whereby these pests can multiply and increase, for they later in the season propagate by "budding," the insects being viviparous. Males almost entirely disappear during the summer, so that all the mischief done us is produced by females. I have not worked out the following figures, but simply quote them from Bonnet, supported by other observers:—"A single female produced 90 young lice, these 90 produced 8,100, and these in the third generation gave 729,000. Carrying on the computation, the eighth generation from a single aphis produces the astounding total of 441,461,000,000,000."

Fortunately, Nature likes to strike a balance, and therefore these pests have many enemies, which last considerably limit the output. Man, where he can get at them, wages constant warfare on them and destroys many billions, but his efforts are futile when it comes to an infested wood or forest. The remedies gardeners apply to bushes and trees are quassia and soft soap, soft soap alone, soft soap and sulphide of potassium, paraffin emulsion, naphthaline, and spraying with Paris green or arsenite of soda.

A Rough-and-Ready Hive-Level.—When the suitable tool is not at hand a most efficient substitute will be found in a common soup plate. Lay it on the floor-board and fill up with water. If inclined to one side, prise up the stand until you judge the water stands level with the rim all round, and there you are!

A Hive-Scraper.—Friends have been kind enough to send me six different kinds of these appliances. One is similar to that used by painters for scraping old paper off walls, and resembles the spatula generally pictured in appliance catalogues; another is the triangular one illustrated in the JOURNAL, a third is an oblong plate of steel with no handle, while yet another is the three-faced "Soal" scraper. My draw hoe has been tried with one and three faces, with the result that I prefer the original single-faced one I found so handy last spring, and I place it first in the list.

Foul-Brood Acts.—Ireland possesses one of these. Happy Erin! Canada is blessed with a little army of fourteen inspectors, and they cry for more. New Zealand is in the proud position of having one of the most drastic and effective Acts in existence. In America the following States and Territories can boast of more or less efficient laws dealing with the disease:—California, Colorado, Connecticut, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Mexico, Dakota, Texas, Utah, Washington, and Wisconsin.

Regarding Recent Comments.—Mr. Crawshaw (page 499, vol. 37) queries me in regard to my belief in varieties of honey-dew. I said (page 436, near top of first

column) that there were two kinds. The aphides are *borers* as well as suckers and sippers of the exuded saccharine juice. They have a proboscis (*haustellum*) by which they pierce and suck the sap from the leaf and even the tender stem. Honey varies in specific gravity from 1.350 to (perhaps) 1.700, but this is not exactly what I meant when speaking of the density of heather honey. If Mr. Crawshaw (page 11) objects to the use of the word density, I, in like manner, dislike the term "gelatinous" applied to heather honey—it has a smack of glucose about it. But perhaps in both cases we mean simply consistency, *i.e.*, spissitude, or the denseness or compactness which belongs to substances not perfectly liquid or perfectly solid.

Mr. A. Green (7727) and Mr. Horsley (7732) seem deeply grieved over the idea that there is likely soon to be a resuscitation of the crusade against foul brood, and both gentlemen sound the old bogey "liberty of the subject," oblivious of the fact apparently that that is the very point a well-considered Bill would aim at securing. The well-doer then would do better—the ill-doer only would suffer, and he deserves it. When we find 95 per cent. of one of the largest and best-managed county associations in England favouring a renewed attempt to secure legislation, it shows that the subject is maturing, if, indeed, it is not fully ripe, and I for one believe the movement will not be suppressed this time until it reaches a triumphant issue.

Rickety Reasoning (page 26).—Truth dead? Nay, verily! Truth is imperishable, indestructible, immutable. Man's narrow and imperfect vision of it varies, that is all. I smiled a smile on reading column 1, and as I read on and began to appreciate the full force of the supposed argument the smile broadened, albeit at the time I was in the grip of the influenza fiend. Just think of it, dear reader! Because the "Queries and Replies" Editor gave a definite answer to a specific and limited question, *therefore* all questions regarding excluder-zinc must be bound down and regulated by that answer. An ounce in the one scale should downweigh a whole ton in the other! The reply on page 460, I doubt not, is correct as an answer to this one question, but placed against this we find that while the general use of excluder below shallow frames has been consistently advised, yet the whole tradition of our JOURNAL has been in favour of perfect freedom of thought and practice in regard to its use below sections. "I have no use for excluder beneath my sections," writes Mr. Woodley. "*Excluder zinc is not necessary.*" How now, my masters! Would you believe these italicised words actually form a part of the very answer Mr. Soal so triumphantly flaunts in my face? But they were carefully suppressed in his version of the answer.

I do not believe in everything Dr. Miller writes (see next issue), but he *is* "an up-to-date and advanced bee-keeper." I join with our Editor in assigning him a prominent position in the apicultural arena, and with Editor York in classifying him as a prince among the world's bee-keepers.

Correspondence.

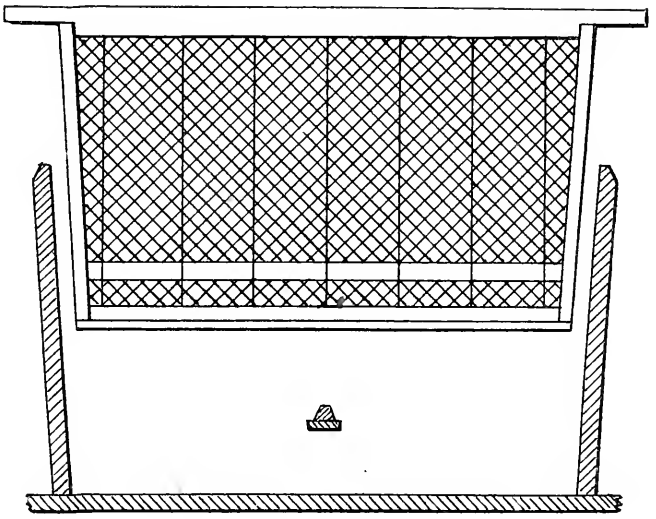
The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

WIRING FRAMES.

[7743.] The usual horizontal or oblique method of wiring frames has, unfortunately, been imposed on British bee-keepers owing chiefly to the fact that the frame formulated by the B.B.K.A. is too weak both in top and bottom bars to permit of vertical wiring. It is, of course, feasible to use thicker bars, but this will somewhat curtail the comb-area, which seems scarcely advisable. Horizontal or oblique wiring, even when well done, is incompetent to prevent buckling of the usual eight-sheet foundation between the wires, especially in those frames which occupy a central position in the hive, and are consequently exposed to the greatest weight and heat of the swarm.

On page 68 of "Guide Book" is given an illustration of a breakdown of comb-foundation said to be made from adulterated wax, but a glance at the wiring will show that the wires have sagged from $\frac{1}{8}$ in. to $\frac{2}{5}$ in., the oblique wire on the right having sagged at least the depth of two cells! It would be absurd to suppose that wiring such as this will prevent uneven stretching and buckling of the foundation, even when the latter is made of pure beeswax. When horizontal wiring is well done there will always be a certain amount of sagging of the wire, foundation and wire moving together until the limit of the wire's movement is reached, when the foundation continuing to stretch, buckling is inevitable. Vertical wiring, on the contrary, cannot sag, and offers an equal resistance to stretching from top to bottom, allowing the foundation to stretch evenly downwards.

The only real remedy, therefore, is the adoption of a frame having top and bottom bars of such thickness as will stand the strain of vertical wiring; and, while we are about it, let us adopt that other great improvement—namely, a "taper" frame. I give a drawing herewith of such a frame, and have no hesitation in saying that it is superior in every respect to the frame known as the Association standard. The dimensions are: 15 in. by 14 in. by 9 in. Top bar, 18 in. long by $\frac{7}{8}$ in. wide by $\frac{3}{4}$ in. deep; end bars, $\frac{7}{8}$ in. by $\frac{3}{8}$ in.; bottom bar, 14 in. by $\frac{7}{8}$ in. by $\frac{1}{4}$ in., with a strengthening rib in middle. It will be seen that when this frame is lifted half out of hive the clearance between end bars and hive-walls is $\frac{1}{2}$ in., or just double the usual amount; when near the top it is about $\frac{3}{4}$ in. each side. For ease of manipulation there is no frame that can approach it, and I feel certain that no bee-keeper who adopts it will ever want to change it for any other. Its comb-capacity is about 3 sq. in. more than that of the standard.



TAPER FRAME.

It is not only important that the comb should be straight, but that it should fill the frame all round; many combs that you see have a $\frac{1}{2}$-in. gap next the bottom rail. I therefore advise fixing a $\frac{3}{4}$-in. strip of foundation in contact with the bottom bar, leaving a $\frac{1}{2}$-in. space between this strip and the large sheet.—SAML. P. SOAL, The Old Rectory, near Rochford, Essex.

[As we have had experience with different sorts of wiring, we have no hesitation in saying that horizontal or oblique wiring, if properly done, is the only sure way of securing comb-foundation in frames. We have seen vertical-wired deep frames where the foundation had slipped down so as to stretch the cells to nearly double their length, which is not difficult to understand, for when the wax is softened by the heat of the cluster of bees the weight alone is sufficient to draw it down. Our correspondent admits that vertical wiring allows the foundation to stretch evenly downwards. For this reason even bee-keepers who use frames with thick bars adopt horizontal wiring, and vertical wiring has almost entirely gone out of use. Oblique wiring is even an improvement on the horizontal plan, and if properly done is by far the best. If the wire is tightly stretched there would be no sagging, and we have seen hundreds of frames containing combs perfect in every respect. One of the advantages of oblique wiring is that if the wires by chance are not stretched tight enough there is no sagging, as suggested by our correspondent; this we know from having carried out experiments for the purpose of determining the best way to wire frames. We use ten-sheet foundation, and have never found it to buckle or sag when made of pure beeswax. The only vertical wiring that is in any way satisfactory is when the wire is embedded in the foundation during the process of manufacture, such as in the "Van Deusen" foundation; but this is flat-bottomed, and is not taken to by bees so readily as natural-base foundation.

To adopt a taper frame, as proposed by our correspondent, would be retrograding to the days before the B.B.K.A. was founded, for as early as 1873 Mr. C. N. Abbott was a strong advocate for its use (see B.B.J. for 1873, page 84). Then about that time there was the "Carr-

Stewarton" (B.B.J., 1874, page 85), the "Sherrington" (B.B.J., 1874, page 111), the "Slindon" (B.B.J., 1874, page 150), and several other hives with taper frames. We have had and worked with all these hives, and have no hesitation in saying that bee-keeping has been simplified and rendered possible of being carried on at a profit by the adoption in this country of the "Standard" frame. Although Mr. Abbott introduced a taper frame, he was one of the committee who recommended the "Standard," and, seeing its great advantage, he was always an advocate for its use. In our early days we had something like twenty taper-frame hives, but we discarded them all in favour of the "Standard," and from the results we have obtained have never had cause to regret it. The inconveniences of hives with tapering sides are obvious, and more than counterbalance any hypothetical advantages of a taper frame.—Ed.]

DRIVEN BEES AT THE HEATHER.

[7744.] As this is the bee-keeper's quiet season, perhaps some of your correspondents who have had experience in utilising driven bees at the heather would give us the method they have found most successful.

I intend giving driven bees a trial next August. The plan I propose to adopt, if the critics think it feasible, would be to get early in the month 8 lb. or 9 lb. of healthy driven bees with queen, and run them into a hive arranged on the following plan:—Two full frames of combs and stores, one at each side of body-box. Next each frame of stores would be placed two frames with full sheets of foundation (in all four), and in centre one frame of empty worked-out comb. Above all would be placed a rack of sections with full sheets of foundation, and over that again a rack of sections fully worked out left over from the clover harvest.

In running in the bees I would kill the queen and give a young fertile one, mated in July, in order that she might fill the contracted body-box with brood.

My excuse for troubling you with above is that I think your suggestions and criticisms, and perhaps one or two reports from others of experience, would be of great interest and profit to many of the readers of your valuable paper.—J. N., Portobello.

CEMENT FOR PAINTING HIVE-ROOFS.

[7745.] I have been painting hive-roofs with Portland cement and linseed oil. They look all right now, but I have my doubts as to how they will stand the exposure to sun and rain. Would Mr. Macdonald kindly give his experience of using cement for hive-roofs?

Is there any objection to covering roofs with "Stoniflex" felt, giving a coat of paint to the felt?—A. P., Sussex.

[We have no knowledge of this material.—Ed.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Among the Bees (page 23, line 34).—"Happy are those," &c.

TO-NIGHT.

We know the dark precedes the dawn;
The night, the day,
When shadowed slumber shall be gone
Its silent way:
And yet, I would not wake too soon—
If rest I may—
Whilst I can steal to-morrow's sun
To light to-day.

The cloud-rack and the burdened gale
Abroad may fling;
No winter's night can ever pale
My dream of spring.
Its fragrant joy shall never stale,
Whilst it can bring
The cuckoo and the nightingale
On conjured wing.

Sleep on then, happy bees, and dream
Your dream—and ours;
We wait with you—nor wasted deem
These work-won hours—
Who know of old, Dame Nature's scheme
To save her powers;
To-morrow's sun shall surely gleam
And wake—the flowers.

Dual-queen System (page 25).—What does "J. M. E." mean when he speaks of the "large brood-nest," seeing that this is contained in an ordinary set of standard frames?

Locality Again (page 27).—Yes; the driest corner of England is wringing wet beside the really dry places of the world. At the moment of writing I can confirm all that Mr. Cowan says of the Swiss mountains. Here in the Engadine, some 6,000 ft. above sea-level, with the ground blanketed by two or three feet of snow, there is no wheeled traffic, and the country sleighs jingle along, often trailing chains as bright as though they had just left the rattle-box. The other day, with the temperature near the thaw point, I had a fireworky spill into a deep bank of snow when essaying a too ambitious feat on my ski, those long wooden runners strapped to the boots. My impetus buried me so thoroughly that I was fain to think of the gentleman in the "Excelsior" ballad. A large St. Bernard dog belonging to the hotel, which had at the outset affectionately hampered my movements (only to abandon me later when progress became more difficult for him), was of course nowhere to be seen when wanted, which shows how overrated

is the breed! Yet, although I got fairly wet in the process of recovery from the moist snow, I was shortly quite dry again in the thirsty atmosphere. To-day, after some 40 deg. Fahr. of frost, every vestige of moisture has disappeared. Writing dries quickly, as witness the fact that the hotel kitten has just walked from my shoulder across my copy without editing it, in spite of an evident intention to insert some clause. Possibly "Cappings" are a shade drier than usual!

Liberty of the Subject (page 27).—The loss of this is one of the necessary penalties of civilisation! We do not know what may come, but, to-day at least, man is not held criminally responsible for the contraction of, say, bubonic plague. So, although he becomes subject to restrictions, he is not shot on diagnosis. Even shooting might find advocates, as tending to increase the immunity of the race. Similarly, rabies and other animal diseases have been more or less satisfactorily dealt with officially. So, too, foul brood may very well be treated legislatively, when we may hope to get it stamped out or diminished, and the risk to the "respectable bee-keeper" correspondingly reduced. I think Mr. Green drew his picture in a light which has induced him to over-colour it a little!

A Poor District (page 28).—Practically no forage but heather! Think of that, some of you more fortunate bee-men, and be encouraged in spite of an occasional bad season. I have lived in this particular district, and it is quite true that, except for a few sycamore trees, there is only the ling to rely upon, and that, as most men of the moors know, is not always reliable! But this little bee-association in Airedale is one of the most enthusiastic that I have had the pleasure of meeting, and I remember to have heard the Rev. Sidney Smith, who helped to promote it, say that he was more proud of it than any other of his foster-children.

A Sting Cure (page 39).—An application of "coal oil" will "remove all bad feelings." Yes; but where is the coal oil when wanted? I remember, when a small boy, being "phut into the coal 'oil," as it is termed in some parts of Yorkshire, and bad feeling was distinctly generated!

The Long Night (page 40).—If this explanation of the cluster restlessness be true, we have here an argument in favour of artificial winter stores, for the necessary consumption of honey containing pollen stimulates and excites, and consequently increases the consumption of unassimilable matter. Premature brood-rearing would undoubtedly be prevented by the absence of pollen. But is it established beyond question that the queen is so restless in a normal cluster, or may not the condition of observation conduce to the conclusion? Perhaps Mr. Edwardes could tell us whether the worker-bees, tucked away in the comb, are fed in that position. It seems unlikely, though within possibility. Has anyone made observations of the occupants of these sleeping-berths and their movements? There seems to be a field for experiment, too, in the matter of "hibernated" eggs. Eggs might be stored at various temperatures for extended periods, when the possibilities of this interesting theory might conceivably be demonstrated. So far, I believe, eggs have not been safely kept for anything like the necessary probation. But failure is inconclusive, for the bees themselves might overcome our difficulties. Only I would utter a solemn warning that the stock so precociously informed as a result of the successful experiment should be destroyed, lest the news spread in the hive world, and our profit, like that of the Ephesians, be taken away, and we be without honour in our own country.

In the happy meantime let us be thankful for the imperfections of our over-thrifty bees! My own "strain" of bees (if Mr. Soal will allow the term) are of a very progressive type, and last summer I remember to have noticed a bee investigating a crock containing water-glass. I wonder, now, if —— !

Queries and Replies.

[3994.] *Examining Hives in Winter.*—Whilst in my apiary on February 6 I had occasion to notice four of my stocks taking their cleansing-flights after being unfortunately kept indoors by severe weather for more than three and a half weeks. I noticed in one of my hives several bees on the alighting-board trying to fly, and then dropping on to the grass never to rise again. I suspected dysentery, and raised the hive from the floorboard, but was surprised to find everything on floorboard all right. Not being satisfied, I commenced to lift out the frames to search for excrement on the combs, but found the bees in excellent condition. As the weather was very mild, I did not think any harm would ensue. I operated about 4.30 p.m., when the other stocks had finished flying. 1. Did I do any injury? The queen had not commenced to lay, and the bees had plenty of sealed stores in all the five frames. I am anxious as a beginner to know whether there is any immediate danger in disturbing bees in mild weather. All my stocks have camphor on top of frames (a wrinkle I obtained from your valued journal) to prevent disease.

2. Could you please tell me how and when to induce the queen to commence laying? 3. After the operation the bees became very excitable, and commenced their cleansing-flight immediately after exposure. Hoping all interested in the craft will have a more successful season than 1909.—G. E. B., Manchester.

REPLY.—1. It is a bad plan to interfere with bees during the winter months, for then they should be allowed to be perfectly quiet. As you say it was very mild when you lifted out the frames it is to be hoped that not much harm has been done. Rousing bees to activity in this way causes them to fill themselves with honey, and if they are prevented from having cleansing-flights by reason of cold weather it results in abdominal distension or dysentery. 2. By stimulative feeding (see page 109 of "Guide Book"); next month will be soon enough. 3. The cleansing-flight was induced by disturbance of the bees.

TRADE CATALOGUES RECEIVED.

E. H. TAYLOR (*Welwyn, Herts.*).—Illustrated list of bee-keepers' supplies by this well-known maker, and everything that a bee-keeper may require will be found mentioned in it. It also contains "Hints on Successful Bee-Management." There is included an illustrated price list of incubators and other poultry appliances. Catalogue of eighty pages free on application.

R. STEELE AND BRODIE (*Wormit, Dundee*).—Full list of hives and appliances, including all the latest novelties. Sole agent in Britain for C. Dadant and Sons' comb-foundation. Poultry-houses and appliances of all kinds. Seventy-two-page catalogue free by post.

Notices to Correspondents.

A. J. H. (Wallingford).—*Dysenteric Bees.*—The bees sent are suffering from dysentery, no doubt caused by the weakness of the colony, which may be due to foul brood or other causes. As your combs are built across the frames and you cannot contract the space, this is a detriment to the colony, and is likely to cause the bees to dwindle. The only thing you can do now is to keep them warmly covered up, and when suitable weather comes unite them with another lot, but before doing so make sure that they are free from foul brood or other disease.

F. V. W. (Gloucester).—*Examination of Hives.*—1. About the end of March is quite soon enough to make a thorough examination of hives (see "Guide Book," page 198), but as you say you have left too many frames, and wish to remove some of them, you could do it on a fine warm day, when there is no wind and the bees are flying freely. Do not uncover all the frames, but only turn up the quilt over those you wish to remove. 2. In March (see "Guide Book," page 110).

SIMPLE ONE (Wigton).—*Loss of Stock.*—The bees are too decomposed to judge if they have died from disease, but from your description we should judge that the colony has dwindled through lack of young bees to keep up heat of cluster and replace the old dying ones. As there is so much disease among bees in different localities, we should certainly hesitate to use honey for feeding from a colony that had died, unless we were certain that it was free from infection.

J. D. T. (Scarborough).—*Transferring to New Hive.*—1. You can, as you propose, place the new hive on the top, and when the bees have started making combs you can drive the queen up from the lower hive with most of the bees, and put excluder-zinc between the two. Examine to make sure you have the queen in top hive; then change its position, placing it at the bottom with excluder between the two. The old hive can be removed when all the brood has hatched out. 2. Warm them, or put the combs in the sun for a short time, when they will lose their brittleness and be quite fit for use again.

J. M. L. (Northumberland).—*Giving Candy.*—As your quilt has a feed-hole you can place the candy over it as you suggest, and cover with a larger quilt, placing warm covering over this.

B. H. (Bath).—*Weed-killer.*—Any of the weed-killers sold could be used for destroying grass, but they would also destroy your bees unless the latter were confined to their hives during the operation and for some time after. A useful weed-killer is made by mixing 1 oz. of carbolic acid with 2 oz. of glycerine, then adding two quarts of water, and shaking well together. To be applied through a fine rose. Be careful to wash out thoroughly the water-can and rose after using.

A. W. (Bartlestone).—*Suspected Comb.*—Bees have died head downwards in cells and have probably become chilled through the moving of the cluster. There was a little pollen but no honey in the comb.

S. H. (Sawbridgeworth).—*Making Candy.*—1. The candy is under-boiled, as some of the sugar crystals are undissolved. 2. Yes, the candy stimulation would start the queen laying. The yellowish par-

ticles are probably the refuse that the bees are removing from the hive, as your colony seems strong and active. 3. The leaf sent looks like that of an *Artemisia*, but when in flower if you will send one we will endeavour to name it. It is impossible to do so from only a leaf. 4. Yes, the whole county is good.

P. AND McI. (Blairgowrie).—*Overstocking District.*—1. It is quite possible to overstock a district, although there are some places where a hundred colonies can be kept, but the best results are obtained in smaller apiaries of about forty to fifty colonies, placed at some distance apart. As you already have seventy hives in one place, and wish to increase the number, we would advise you to select some other quarter for another apiary. 2. You can get printed particulars respecting examinations by applying to the Secretary, B.B.K.A., 8, Henrietta Street, Covent Garden, London, W.C. 3. There is a ready sale for good Scotch honey in the English market, and advertising in the B.B.J. would enable you to dispose of it.

A NEW HAND (Cowes).—*Cleaning Floorboards.*—The proper way is to have a spare floorboard, which place on the stand, removing hive with floorboard to one side (see "Guide Book," page 200). Give a few puffs of smoke, and lift the hive from the old floorboard and place it on the new one. You can then clean the board, and it will be ready for the next hive. A few puffs of smoke would not be detrimental, and the operation will only take a few seconds, and can be completed with hardly any disturbance of the bees. If there are a few active bees on the floorboard they will return to the hive, especially if you help them by brushing them on to the alighting-board. During winter, when bees are not able to get out, they cannot clear the dead bees and rubbish which accumulate, although they keep the floor scrupulously clean in summer, and carry out their dead at that season.

J. H. (Boxmoor).—*Dysenteric Bees.*—1. The honey has a nice fine granulation, and is of very good flavour. It has no distinctive aroma, and is quite suitable for eating. 2. Your bees seem to be suffering from virulent dysentery, described on pages 421-4 of B.B.J. for October 28 last, to which please refer. A good many stocks have been lost from the same disease, and we would recommend you to destroy the combs and disinfect the hives before using them again.

M. V. E. (Cobham).—*Dead Bees.*—It is not at all an uncommon thing for bees to die of starvation with plenty of candy. If the cluster of bees is small they cannot keep up sufficient heat to move from one part of the hive to another in very cold weather, and thus they frequently die. When bees die with their heads in the cells it is usually a sign that they have succumbed to starvation.

W. H. (Longsdon).—*Staffs B.K.A.*—The secretary of this association is the Rev. G. C. Bruton, Great Haywood Vicarage, Stafford.

SUSSEX.—*Joining a Bee-association.*—You will find membership of a bee-association of great advantage to you. Write for particulars to the hon. sec. of the Sussex B.K.A., Mr. E. Powell, Clayton Nurseries, Hassocks, as there is no county B.K.A. in Kent at present.

ABEILLE (Durham).—*Making Candy.*—1. The candy is not sufficiently boiled, and is not made from the right sugar, which should be "white lump" or "white crystals." Raw sugars, such as Barbados, Demerara, or Trinidad, are likely to cause dysentery. 2. Your queen from Italy evidently arrived too late in the season to build up the colony, and as she ceased laying in August the hive became depleted when the drones were slaughtered. The bees have suffered from dysentery, and the mouldiness shows want of ventilation and a sufficient number of bees to keep the space they occupy warm enough. The glass quilt should only be used with strong colonies, and even then it should be well covered over, otherwise moisture is liable to condense on it and keep the hive damp.

A. M. G. (Haddenham).—*Moving Hives.*—1. The colonies should be moved not more than two or three feet a day, not reckoning those on which bees are not flying (see "Guide Book," page 120). If this is impossible, move them two miles, and after a few weeks bring them back to where you want them to stand (see page 116). 2. You will find full instructions in "Guide Book." 3. You can transfer the bees to clean hives at the end of March. 4. We would advise you to use excluder under sections. 5. To obtain expert's certificate you would have first to pass an examination in practical work. We have sent you particulars of examinations.

Honey Sample.

F. W. (Mellor).—Thank you for your letter. The sample is of fairly good quality, gathered from mixed sources. The small quantity of honey-dew it contains has evidently effaced any distinctive flavour, but it is quite a palatable honey.

Editorial, Notices, &c.

REVIEWS.

Beneficial Results from the Fertilisation of Fruit-Blossoms by Bees. By Thomas William Cowan, F.L.S., &c. (London: *British Bee Journal* Office. Price 3d.)—This is an address which was given by the Chairman at a meeting of the British Beekeepers' Association in October last, and has been reprinted by request. It is illustrated, and lists of varieties, known to be self-sterile and self-fertile, of pears, apples, and plums have been added.

Die Faulbrut der Bienen. By Fritz Leuenberger. (Published by F. Leuenberger, Bern, Switzerland.)—The author of this pamphlet is at the head of the foul brood insurance department of the Swiss Bee-keepers' Association. It is written in simple language in order that it may instruct those who do not read bee-papers or attend meetings of bee-keepers, and are consequently suffering foul brood to exist through ignorance. It is the work of the association to find out such, and to supply them with the pamphlet. It describes how to recognise mild and virulent foul brood, or, as it is called in Switzerland, "strong-smelling" and "odourless" foul brood. Sour brood is described, as is also dead brood free from bacteria. The reasons of the danger of foul brood are explained, and we learn that so rapidly do the germs multiply that from a single bacillus sixteen millions are produced in twelve hours. From this it will be seen how important it is to attack the disease in its earliest stages. The wonderful vitality of the spores is explained, and it is stated that they have been known to germinate after being dormant for twenty years. It is recommended to destroy all combs and frames and disinfect hives by scrubbing thoroughly with a boiling 10 per cent. solution of soda. The hives should afterwards be scorched with the flame of a benzine lamp. As a preventive of foul brood it is recommended that every beekeeper should see that his colonies are strong and that no weak ones are kept, as the latter are the first to become affected. Also care should be taken to prevent brood from becoming chilled at any time; stocks should be kept well protected, especially in spring. Improperly-nourished brood is very liable to get the disease.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, February 17, at 11, Chandos Street, Cavendish Square, when Mr. T. W. Cowan presided. There were also present Mr. W. F. Reid, Mr. C. L. M. Eales, Mr. J. B. Lamb, Mr. E. D. Till, Mr. T. Bevan, Mr. E. Walker, Mr. A. Richards, and Mr. G. H. Skevington; county representatives: Mr. A. W. Salmon (Suffolk) and Mr. W. E. Hamlin (Surrey); and Mr. W. Herrod, Secretary.

Letters expressing regret at inability to attend were received from Miss Gayton, Mr. R. T. Andrews, Mr. A. G. Pugh, Mr. O. R. Frankenstein, Mr. E. R. Stoneham, General Sir Stanley Edwardes, Dr. Elliott, and Colonel H. J. O. Walker.

The minutes of the Council meeting held January 20 were read and confirmed.

The Chairman said he wished to thank the Council very sincerely for the proposition with regard to himself. He had worked for the Association, not with the idea of being thanked for his services, but because he was anxious to help forward the craft as much as he possibly could, and was gratified to find that those services were appreciated. He had acted as their Chairman for thirty-six years, and he begged them to release him from those duties, as he now felt that the work should be undertaken by someone younger. At the same time, his services as adviser would still be at their disposal. When abroad some years ago he tendered his resignation, but in consideration of the pressure brought to bear on him, and a statement by the late Baroness Burdett-Coutts that his resignation would mean hers also, he consented to continue while she lived, on condition that the Council relieved him of as much work as possible. Her death took place several years ago, and yet he was still, in deference to their wishes, occupying the position; also, through the unfortunate position of the Association during the past year, the work and responsibility had been very great. Fortunately, his health had remained very good, and he had been able to get through it all right, though he confessed it was a great tax upon his strength and time. They would also have observed by recent letters in the BEE JOURNAL that some people imagined the Association had suffered by being fostered too much by that paper. He was very sorry if this were the case, but he assured them his desire had always been to help them as much as he possibly could.

He would also like to mention another matter. He was making alterations in connection with the BEE JOURNAL and *Record*. While he still remained the Editor, the business part would now be taken up by Mr. W. Herrod, who would also be his pupil in the editorial work, with a view to his eventually taking that position when he was no longer able to carry on the work of Editor, and he was sure the Council would render all the help in their power to Mr. Herrod. The rela-

tion between the Association and the paper would also have to undergo a slight change. Hitherto he had never charged them anything for the advertisements which had appeared on their behalf, but under the new conditions it would be but right for the Association to pay for their advertisements in the future.

With regard to office accommodation, he had that day inspected a suite of offices which were excellently situated and very suitable for the work of the Association. One room could be placed entirely at their disposal for the secretary and his work; the library could be installed in it, also Council and Committee meetings could be held there, which would be a great advantage, as all the books and papers would be at hand for reference during meetings. There were so many books that it was impossible for the secretary to carry the lot any distance, and the absence of them very often hampered the work of the Council. This room might also be used as a kind of club-room for members of the Association, where they could make appointments with friends or business people, or read the library books and publications on apiculture from other countries which would be placed on the table.

The other rooms would be used for the work of the papers, and if the Council thought it would be an advantage he was willing to make a move, and, for a very nominal rent for the present, place this room at their disposal.

Mr. Reid said he was quite sure they would all agree with him that the resignation of Mr. Cowan would be nothing short of a calamity. They were all aware of the yeoman service rendered them by the Chairman in the past, and they all realised the great strain put upon him during the past twelve months. By the appointment of a business secretary, who had already shown his capacity and energy in dealing with the work of the Association, and also by the new arrangement Mr. Cowan had made whereby Mr. Herrod would relieve him of a great deal of labour in connection with the papers, the duties in future would be very light. As a Council they should also promise to help as much as possible, and so make the work of their Chairman more easy. Taking all this into account, he begged the Chairman, for the sake of the well-being of the Association and for bee-keeping generally, to reconsider his decision and consent to remain with them.

Mr. Lamb very strongly supported all Mr. Reid had said. No one appreciated more than himself the great amount of labour Mr. Cowan had done, and personally he would promise to help all he possibly could. All present agreed with the remarks of Mr. Reid and Mr. Lamb, and eventually Mr. Cowan consented to think the matter over.

The following new members were elected:—Miss L. H. Ketteridge, East Sheen, Turners Road, Round Green, Luton; Mrs. W. Herrod, Luton; T. B. Fletcher, Esq., R.N., Agricultural Research Institute, Pusa, Bengal, India; Mr. W. R. Butter, Eastgate Cottage, Brockhampton, Havant; Mr. J. Herrod, Trentside Apiary, Sutton-on-Trent, Newark; Mr. F. W. Arrow, Foots Cray, Kent; Mr. A. H. Wilkes, Harpsford, Lichfield Road, Four Oaks; Hy. Corner, Esq., M.D., Brook House, Southgate, N.; Mr. R. Mossop, 8, Fowkes' Buildings, Great Tower Street, E.C.; Mr. C. J. N. Twill, Onslow Gardens, Wallington, Surrey; Rev. Bro. Columban, O.S.B., St. Mary's Abbey, Buckfast, Devon; Mr. R. V. B. Best, Abbotswood House, Cinderford, Glos.; Mr. A. R. Moreton, Hallow, Worcester; Mr. F. P. Cheesman, Sutton Valence, Kent; and Lieut.-Colonel C. B. Hunter, Sharcot House, Pewsey, Wilts.

The report of the Finance Committee for the current month was presented by Mr. Eales, showing an available balance in the bank of £60 15s. 6d.

The report of special meetings of the Finance Committee was presented by Mr. Eales as follows:—

"The Committee met at 8, Henrietta Street, on Wednesday, February 9, and sat from 5 to 7.45 p.m., with Mr. W. F. Reid as chairman and Messrs. Bevan, Eales, and Skevington as members. First they went through the accounts not fully examined at last month's meetings. Next they went through the payments for 1909, and provisionally drew up the expenditure side of the annual statement of account. They adjourned till 4 p.m. on Monday, February 14, when the following members attended: Messrs. Eales, Lamb, and Skevington, the first-named acting as chairman. The Committee sat from 4 to 7 p.m. The balance as shown in December's manuscript statement is correct according to the pass-book, and is as follows:—

	£	s.	d.
Apis Dorsata Fund.....	20	0	0
W. B. C. Fund.....	23	18	6
General Fund	89	15	7
	£133	14	1

"A balance-sheet cannot be properly drawn up until the books are written up to date. No entries have apparently been made in the ledger during 1909, and none in the cash book since August 16, 1909. No petty cash register has been kept up for 1909. The bank pass-book from August, 1902, to May, 1909, *non est.* If the Council will accept Mr. Young's statement as to postage expenditure—

viz., £10 15s. 8½d.—there will be no difficulty in adjusting the petty cash account for 1909. The Committee are of opinion that the account books should be posted up to December 31, 1909, by a ledger clerk, and that a subscriptions register should also be kept up, and recommend that this should be done at once, so as to enable our new secretary to start fairly with everything in proper order and up to date."

A letter was read from Messrs. Heath and Co. agreeing to issue a policy for insurance against damage by bee-stings for another twelve months, and the secretary was instructed to prepare forms, &c., for the purpose.

It was proposed by Mr. Lamb, seconded by Mr. Skevington, and carried, that the secretary be empowered to employ a ledger clerk to post up the books and prepare balance-sheet to December 31 last.

It was also resolved that a minute-book of Finance Committee be kept. Proposed by Mr. Reid, seconded by Mr. Richards, and carried, that the annual meeting be held on April 14, to give opportunity for bringing all the work up to date.

The draft agreement with Mr. W. Herrod as secretary was submitted by Mr. Eales and Mr. Lamb, and it was agreed to, the Chairman being asked to sign the same on behalf of the Council after it had been properly engrossed.

It was resolved that a fidelity guarantee be taken out by the Association on behalf of Mr. Herrod, the premium for same to be paid by the Association.

The application of the directors for medals and certificates at the Grocers' Exhibition, 1910, was granted, and Mr. T. W. Cowan and Mr. E. Walker were recommended to act as judges at same.

Copies of resolutions against the new scheme of reorganisation of the B.B.K.A. were read from the Windsor and District B.K.A. and the Cumberland B.K.A., also a resolution from the latter association urging the Council to again take up the matter of foul-brood legislation.

The next meeting of the Council will be held on March 17.

DEVON B.K.A.

ANNUAL MEETING.

The annual meeting of the Devon Bee-keepers' Association was held on Friday, February 4, at the Guildhall, Exeter, Lieut.-Colonel Walker presiding over a small attendance.

The council, in their twelfth annual report, recorded with regret the loss by death of several ardent supporters of the association, and went on to say that, notwithstanding losses, the numerical strength of the association was being well sustained, the total for the year being 272, as against 254 the previous year, a net increase of eighteen. The accounts, whilst there was a good balance of assets over liabilities, showed barely sufficient margin to admit of working the association during the year, the County Council grant not being paid until after the year's work was finished. The work of the association had been well maintained during the year. The bee-tents had done some very useful work in visiting many shows during the season under the council grant, which enabled them to send a lecturer and tent free of charge to any place that might be desired. The annual honey show was held at Exeter in conjunction with the Devon and Exeter Horticultural Society on November 11 and 12. It was full of interest to bee-keepers, and a very successful show.

Moving the adoption of the report, the chairman said the association was to be congratulated upon it. It was cheering to see that they kept up the number of members. With regard to bee-keeping, there was no country that produced such good honey as Great Britain, and no better proof of this could be given than the fact that they, of all European countries, had no tariff duty on honey. In Continental countries there was a serious tariff, both on the natural and the artificial product, and, in spite of this, British honey kept its place in the market.

Mr. E. E. Scholefield having seconded and Mr. H. Ellis supported, the report and accounts were adopted.

Sir Thomas Dyke Acland, Bart., was re-elected president, and Sir J. H. Kennaway, Bart., hon. vice-president. The other vice-presidents were elected, a suggestion being made to the council that all Members of Parliament in the county should be invited to become vice-presidents.

Mr. R. W. Furse (Woodbury) was again elected hon. secretary, Miss Pittis (Uplyme) hon. treasurer, and Mr. E. H. Oldham (Chudleigh) hon. auditor.

A suggestion that the annual meetings be held at different centres was negatived, and the new scheme for the reorganisation of the British Bee-keepers' Association was discussed. The meeting approved, in general terms, the proposals put forward by that Association.—(*Communicated.*)

A TWO-QUEEN SYSTEM.

SOME REMARKS ON ITS ADAPTABILITY FOR A HEATHER DISTRICT.

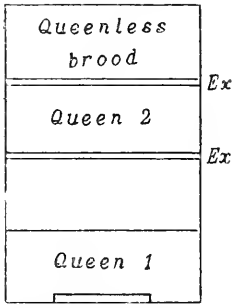
BY "MEDICUS," NEWCASTLE-ON-TYNE.

(*Concluded from page* 66.)

The next, and more important, step is the final preparation for the heather harvest. The problem is to obtain the

maximum number of worker-bees of the right age for the harvest. Worker-bees are said, in ordinary circumstances, not to become nectar-gatherers until thirty-five days after the eggs were laid from which they are produced. Therefore, as many as possible should be of this age at the beginning of the harvest. A colony of old worker-bees loses strength extremely rapidly after reaching the moors, and if the honey-flow comes late the results are disappointing.

Heather in the North of England comes into bloom as a rule about August 12, and lasts until September 20, yet the date and duration of the flow are most variable (1906, August 28-September 2; 1907, September 6-12; 1908, August 3-12; 1909, August 27 and September 2, 3, and 5). No one can foretell when the flow will come, although the time of coming into bloom can be guessed some weeks beforehand. It is desirable, therefore, to have as many eggs produced as possible from early in July until about August 4, so that one may have bees

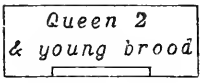


TWO-DECKER COLONY.
Ex, Excluders.

ready for the harvest, come it early or late. Bees from eggs laid later than the beginning of August never take part in the harvesting. Further, eggs and young brood generally do not survive a long journey to the moors, especially if the night is warm and water is not supplied freely *en route*. My plan of action is as follows:—Two and a half weeks before the journey to the moors I go through as many colonies as possible, and remove any combs I can find well filled with eggs only, and place them without bees in a spare super. The empty spaces are filled up with foundation or empty brood-combs, and their position noted. The super with the combs of eggs is placed above one of the two-decker colonies, as I might call them, but separated from it by a queen-excluder. This process is repeated every two or three days until eight or nine days prior to the journey. The providing of these empty combs in the middle of the brood-nest is a great stimulus to egg production. In this way each colony has one or two supers of extra brood of known age and without a queen, all of which must hatch in less than a fortnight of their arrival at the moors.

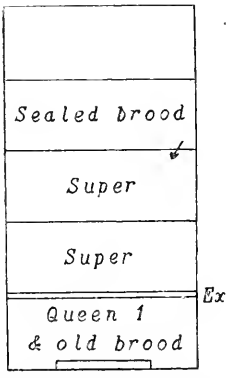
Just prior to the journey one queen from each colony is selected to stay at home, and to it is given the least-filled combs of brood, young grubs, and eggs, with a few bees. This colony, if headed by a young queen and fed up during August and September, will make a quite strong enough stock to winter.

The other queen is confined to one division of brood-combs by queen-excluder, and



HOME COLONY.

over this the supers are placed. The care of the reserve brood is the next thought. A piece of unbleached calico is laid over the top of the upper super, and in it is cut a ½-in. hole in such a position as to allow an entrance into the back of the super, but well to one side. When trying this method last season I found that the young bees as they were hatched made their way down into the super, but owing to the small communication between the reserve brood-chamber and the super, and because of the position of the hole, the incoming nectar was not carried to the cells vacated by the brood, but stored in the supers. At the end of ten days or a fortnight the upper boxes of empty brood-combs were



COLONY AT THE MOORS.
Ex, Excluder. The arrow shows position of hole in calico.

removed, and any bees on them shaken in front of the hive. Occasionally queen-cells may have been started on these combs.

Where any doubt exists about the presence of a virgin it is not advisable to shake, but to allow the bees to escape into the super by a "Porter" bee-escape board. A virgin confined to the supers, and so prevented from being fertilised, is sooner or later destroyed if there is a fertile queen below.

By such manipulations one can ensure that whenever the honey-flow does come a very large force of bees will be ready to claim their share. Though with an early flow the reserve brood may not help in the harvest, yet they will in any case ensure a good colony to winter. (In an average colony on the old system, owing to the altitude, the cold nights, and exposed positions of colonies at the moors, little brood-raising, as a rule, takes place, and often the queen ceases to lay entirely for two or three weeks of the time. Owing to this, and the great wear-and-tear the workers undergo, an average colony comes back from the moors so weak that a South-country bee-keeper would probably scorn to winter them.)

If increase is not desired, when the bees return home from the moors the home half of the colony can be united with the returning half. A more interesting and economical arrangement is to winter one half on the top of the other, each with its own entrance, and the two separated from each other by several thicknesses of calico or a wooden board. The necessity of buying a second queen in the following spring is prevented, as all that is necessary is to place a queen-excluder between the two colonies early in May. In this second season results should be divided by two, as one now has two colonies working as one with two queens, instead of a single colony divided between two queens.

To its many advantages the two-queen system adds charm and interest to the hobby of apiculture; it lends itself to such infinite possibilities out of the common track, and gives great scope to the individual judgment of the bee-keeper. Critics may say that it needs too much fussing. A two-queen system is certainly of no use to the let-alone or slovenly bee-keeper, but to the bee-keeper who regards his bees as a hobby to be intellectually enjoyed it has many advantages. A hobby which does not give rise to thought and does not involve some labour is no true hobby.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE LONG NIGHT IN THE HIVE.

[7746.] By an oversight, my B.B.J. only reached me this morning, and I take the earliest opportunity of replying to Mr. Crawshaw's courteous and kindly criticism of my article under the above title.

No doubt Mr. Crawshaw touches the main objection to all conclusions drawn from observation of bee-life when he suggests that the conditions of observation may, to a certain degree, be responsible for the facts noted. In common with all students of hive-life, I have long realised this danger, and, so far as possible, tried to minimise it. I think, however, that the comparative restlessness of the queen in the winter-cluster is fairly well ascertained, as far as my personal observation goes. Unfortunately, further investigation of the winter-life of the hive has been rendered impracticable for this season, in my own case, by the death of the bees in my observatory-hive. This is an outdoor hive holding six standard frames. It is protected by a good weatherproof outer case, and the normal winter temperature inside has been hitherto kept up by artificial means. The lamp used for this purpose, however, failed me on a night when 13 deg. of cold were registered, with the result that the stock was frozen out. Up to that date, as far as it was possible for me to judge, the normal conditions of wintering had been fairly well sustained; and the hive is so made that inspection is possible at all times without serious disturbance. Though I kept the cluster under regular daily and nightly observation, I always found the queen alert and uneasy, and the worker-bees—except those immediately surrounding the queen—in their usual sluggish condition.

With regard to the bees tucked away in the empty brood-cells, the theory I formed was that each remained in this position until hunger brought her out for her periodical ration, when the berth was at once confiscated by another individual. I cannot, however, be sure of this; for, although with the gradual progress of the cluster over the comb each cell in the rear became permanently empty and each cell overtaken continuously occupied, I could never hit upon the moment when the presumed exchanges were made.

Perhaps the question of the possibility of the "hibernated egg" is best treated in the whimsical spirit adopted by Mr. Crawshaw. This was, of course, to some extent my own attitude throughout the article. But, as the genial and learned "Comb-Capper" remarks, the thing is distinctly interesting. It costs us at present 20 lb. of good honey to winter each stock. If we could only induce the bees to hibernate, and then, when they awake in the spring, supply them with preserved eggs for queen-rearing, the saving in a large apiary would be obvious. The difficulty, which looks at present insurmountable, is how to get the queens fertilised early enough in the season. We should have to "preserve"

drone-eggs on the same principle, and probably erect a special mating-house artificially raised to summer heat. But this reads rather like poaching on the ground which Mr. Crawshaw has made peculiarly his own: it is too perilous work for such a novice in persiflage as yours faithfully—TICKNER EDWARDES.

FOUL-BROOD LEGISLATION.

[7747.] I see some of your regular correspondents are at loggerheads on this subject, and while I am only a beginner, and so far have had no experience of foul brood, there are one or two points that occur to me on the subject, which may perhaps have weight in any considerations or consultations thereon.

In the first place, it always seems to me very unscientific to destroy anything because we do not know what it is. There is not, so far as I have been able to judge, any proof that foul brood is only produced by contagion, and until this is an established fact it would appear to me to be useless to try to cure it by simply destroying isolated cases. In the case of rabies, which one of your correspondents cites as an example, there was every proof that the disease was spread from dog to dog, and therefore the severe measures adopted were quite justifiable, and, moreover, amply justified by results. But there is another instance, which seems to me to be even more analogous to that of foul brood, and one which doubtless many of your country correspondents have had practical experience of. I refer to swine fever. There is perhaps no evil of the kind against which more strenuous and aggravating measures have been taken, and, up to now, what has been the result? Swine fever is as prevalent as ever, and the industry of pig-rearing has been so heavily handicapped that only a few very daring spirits care to stick to it, with the result that we are daily receiving more and more foreign supplies of a practically indispensable article, which would give much employment to our agricultural population.

I am inclined to agree with Mr. Green (whose exaggerations are doubtless more humorous than otherwise) that it is not right to penalise an individual for something he cannot help, especially when the party in authority knows very little more about the matter than the victim. I much doubt whether any legislation of the kind would be effectual. There are always a certain number of people who take up new things, and, tiring of them, "drop them," as it were, and if a means could be devised of making bee-keepers keep their charges clean it might possibly be beneficial; but I am disposed to think that the cost of doing even this in an efficient manner would, from a financial point of view, come to more than the benefit derived.

Better would it be to continue research until the actual conditions which contribute to the development and spread of the disease are definitely ascertained, and then take such steps as may be indicated; but to get powers to interfere with the individual bee-keeper to such an extent as is proposed would, I feel certain, tend very largely to discourage all but the most enthusiastic.—H. G. MACE, Buckhurst Hill.

[The actual conditions which contribute to the development and spread of the disease have been ascertained and are well known. Foul brood is not spontaneous in its origin, and its sole cause is the introduction into the animal system of a healthy larva of the poison from the dead body of a diseased larva or its remains. It is an established fact that foul brood is contagious, and it is perfectly well known that it is carried from one hive to another in the honey which bees obtain from a diseased hive, either through robbing or otherwise. Herein lies the danger, for, however free from disease an apiary may be, there is always the chance of its being imported from another apiary whose owner is ignorant or careless. It is quite a common thing to hear of stocks having died out, and the empty hives allowed to remain and be robbed by other bees. There are also a good many who do not trouble themselves about their bees, and do not see that they are strong and are housed in sanitary hives, or have proper food, ignoring the fact that strong, vigorous colonies, cleanliness, and suitable food keep bees in a healthy condition and give them the power to resist infection. How are these propagators of the disease to be got at without legislation? For it must be admitted that such careless bee-keepers are a real danger to the industry, and it would be better if they gave up bee-keeping altogether. There are plenty of experts quite capable of being inspectors, who could be trusted to work without being oppressive to anyone. Legislation has proved satisfactory in other countries, and there is no reason why it should be less so in this country.—ED.]

OVERSTOCKING A BEE-DISTRICT.

[7748.] With regard to your reply (page 72) to a correspondent *re* overstocking, this subject is of so much importance that I think it would be advantageous to have it thoroughly discussed. I readily admit that in early spring 100 colonies might not be able to obtain a sufficient supply of pollen, but I find it difficult to believe that there has ever been an authenticated case of overstocking during the time clover

is blooming, and after, say, dandelion comes into flower for pollen. In Northumberland bee-keeping is not carried on extensively enough to put the question to a practical test, so far as the clover-harvest is concerned, but some knowledge is available in regard to the heather-harvest. I have for many years sent bees to the village of Edmondbyers, County Durham, where hives are concentrated annually to the number of 300 and upwards—the total in several years being in excess of 400 hives—and although unsuccessful bee-keepers have talked of overstocking, I have never heard of anyone able to give "proof" of it worth serious consideration. If this is the case with regard to a heather moor it is just possible that there is an erroneous impression in regard to the overstocking of a good clover district.

The bee-keeper can by artificial means make up for shortage in early spring, and, if there are real drawbacks at that time of the year, the question is: "Does it pay a bee-keeper to keep a large number of colonies together rather than incur the additional expense of out-apiaries?" A notable case in support of my contention is that of the late Mr. E. Alexander, of Delanson, N.Y., who, after paying due regard to the bogey of overstocking, at last resolved to concentrate to reduce trouble and expense, and successfully demonstrated that 750 colonies could be kept in one apiary, and his colonies contained twice as many bees as the average colony here. I recently heard of a bee-keeper buying a small apiary near his own to prevent the spread of bee-keeping in his locality because of the fear of overstocking, and, all told, the hives in the district did not exceed twenty.—J. N. KIDD, Stocksfield, Northumberland.

THE REORGANISATION OF THE B.B.K.A.

[7749.] Errors are rungs of the ladder which mounts to knowledge. They needs must be. They are as rough steps found now hewn, now accidental in the path, as we mount "Excelsior" to the crowning rock of wisdom. Channing clothes the idea with fit words, saying: "Mistake, error, is the discipline through which we advance." Others before us have digged and delved in the chaos, have sifted and winnowed, and little by little, step by step, we have advanced, now grasping some fact but half-understood before; now exploding some old fallacy, some old myth, grey and hoary, until at last we have reached a stage at which we think we have some knowledge of insect life.

Errors, like straws, upon the surface flow.
He who would search for pearls must dive below.
—DRYDEN.

But how far are we on the road? Is there not still a multitude of labour for ourselves, our collaborators, and for those who will follow us? Is the last word spoken about parthenogenesis? Of the diseases of bees we have but little advanced beyond the rudiments. We know the symptoms, the microbes, and the bacilli; but we yet lack the knowledge of that drug or of that organisation which shall enable us to laugh at the terrors of foul brood.

So much to do, so little done.

In this letter I plead the cause of organised effort to promote the one cause, the one cult we all have so much at heart. I do not criticise the past. I have such confidence in the loyalty of those who have had the management of the Association, such a firm belief that they have done "all their possible" (to use a French idiom), that to me it would almost seem ingratitude to do so. In the fierce fight of the first mêlée they have borne the brunt of the battle. They have helped with purse and brain. A hundred times we have praised and thanked them in our journal and at our meetings. Let us not forget this, and recall our words.

But this is the age of the wireless telegraph, the motor, and the aeroplane. We are forced onwards. We are atoms in a glacial torrent of science, of search, of discovery, and ever onward we are compelled, overwhelming everything. The force is irresistible, and will never cease until time is no more. And the mission of our peculiar atom—of which, again, we personally are only minute portions—is to take care that our own special lamp shall always be bright and burning, in order that the student who thereat would light his flame may in his need find both fuel and heat.

It is the gathering together, the welding, the disciplining together of a number of minds united as to one purpose which has always achieved the greatest results. It was this that has made the German Empire the mighty power it now is. It is this same harmonising of men and ideas which has made our numerous societies for commerce, as for agriculture, forces which the powers that be must recognise, and to which they can apply for reliable information. Apiculture and the production of honey, from being merely a hobby—a pursuit which a few enthusiasts indulged in—have now become aids to the farmer and the cottager, important assets in his yearly income. Right well have we been helped by our Association and Journal, as I have before said, but the time has now arrived when bee-keepers should take the matter into their own hands.

To achieve these great ends, it needs,

first, that we should have an organisation which is really representative. It should gather together and embody all the available wisdom of the craft. We should have the very best men. No single portion of the country has the monopoly of intellect.

> "If there are lords in the South there are chiefs in the North."

The blunt common-sense of the Northern shires would be mellowed by the suavity of the South. Therefore it seems to me that such an end would be best attained by each county association sending a representative to a general assembly, which should meet once or twice in each year. But in practice much business cannot be got through with a large committee; a smaller one gets through its work much more speedily and better. Now by this means you have caught your hare, and the cooking—that is, the preparation of all by-laws, rules, and regulations—should be the work of this smaller committee. They would discuss and decide where the funds necessary could be raised, and how. I cannot believe that with a strong Association actually in touch with each county this would be a difficulty. It is only just that if you employ anyone to do your work, the expenses thereof should not come out of his pocket; therefore an allowance should be made to the smaller committee for travelling expenses. Leaving the financial arrangements and governing regulations to your delegates' delegates, you might also very safely entrust to them the decision as to whether Parliamentary powers should be applied for to deal with foul brood, and if a Royal charter of association would be beneficial. But let them never forget that what I have sketched out in as few words as possible is but one part of their duty. For the proper advancement of our science it is necessary that facilities should be given for study and research, especially in the higher branches. If in this we fail we scarcely justify our existence.

I have now thrown the football in the midst; let others who will kick it. I fear I have much trespassed on the patience and benevolence of our journal. I had purposed when I commenced this article continuing my jottings of what happened many years ago. This I must defer. The present subject seemed very much the more important. When a matter becomes so pressing, so important that discussion is compelled—to use another French idiom, when "cela saute aux yeux," or self-evident—then we may hope it will be so thoroughly thrashed out that the result will be a renewed and powerful Association, rising, Phœnix-like, from its ashes. Such is the fervent wish of—J. SMALLWOOD, Hendon.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Foul Brood.—In *Gleanings* we find the latest pronouncement of the Bureau at Washington on the subject of disinfection: "We can be sure of complete disinfection by burning out the hive," *i.e.*, scorching the interior with a painter's blue-flame lamp. I am neither a prophet nor the son of a prophet, but I am all but confident Dr. Miller will have a sad awakening when he finds next season that he has failed to kill, and has not even scotched, the snake.

A contrast worth noting is the fact that in America the bigger the bee-keeper the keener he is on securing legislation to suppress foul brood, while in this country the extensive bee-keeper is *supposed* to look on such a project as anathema. Messrs. Root and the other Ohio bee-kings are calling for legislation (page 35), and the New Jersey Association unanimously approve of a drastic enactment, and have banded themselves in a determined combination to make their Bill an Act during the present session.

Against Colour-Breeding.—The editor has the following on the question whether some bees are better resisters of cold than others: "Experience in our own case shows that at least those strains that have been bred for colour will not stand as much cold as the dark strains that appear to be more nearly the normal type of the race; but if for any reason the type is changed the ability to withstand cold is decreased." I think the reasoning here is sound, and it is backed by twenty-five years' experience.

Chunk Honey.—In the *Review* a Southern writer favours this form of surplus honey: "I will say without fear of contradiction that chunk-honey production has a great future. It has been largely instrumental in making Texas the greatest bee and honey State." The Northerners' verdict is "Throw physic (chunk honey) to the dogs. I'll none of it." The consumer there considers it "mussy," defective in flavour, and the extracted portion caused the whole mass to granulate.

Nosema in Australia. — The *Australian Bee-keeper* has several articles on the heavy losses lately sustained by Australian bee-keepers. In one case, out of 1,783 colonies 996 succumbed, leaving 787 survivors. In experiments made of feeding bees on the contaminated honey practically all the bees thus fed died. I regret to say that I am personally suffering from a

somewhat similar trouble. Three years ago I obtained a swarm of bees from Hampshire which did well until about the beginning of October. Then it developed marked symptoms of disease, and died out the following spring. Since then I have had trouble, but I want to see and know more before I can make any definite assertion.

Holylanders.—The editor expected great things from these bees, and he found them *great* stingers, and undesirable because of their propensity to tolerate laying workers. Mr. Laws, Texas, describes them as "the most wicked bees to handle that I have ever seen," and for this reason he has discarded them. Mr. Simmins found them vicious, and records that they developed fertile workers to an alarming extent.

Painting Hives.—Congratulations to *American Bee Journal* on attaining its "Golden Jubilee Year"! The associate editor (page 6) does not paint his hives! I would have all hives painted, for one or all of the following, amongst other, reasons: 1. They look ever so much better painted. The senior editor is a man of æsthetic taste, and adorns the front cover of each issue of *A.B.J.* 2. Painting preserves the wood. 3. In this way the existence of the hive is doubled or quadrupled. 4. Suitable painting keeps the interior of the hive *warmer* in winter. 5. It keeps it *cooler* in summer. 6. It hinders cracks and faults in the wood from developing. For these reasons driving rain and melting snow are repelled from the wood, or at least it does not absorb the moisture readily. *Therefore,* Doctor, the moisture from outside does not penetrate to the interior. You are a prohibitionist, I am a temperance advocate. We both aim at keeping moisture (drink) outside! Inside it works evil, outside it can do no harm. So with moisture in the hive. But, you will say, moisture is generated in the hive. Yes; that is so. But we never should think of letting it find its way out through the wood. That process would be slow, tedious, uncertain, and at best but partial. Our *absorbent* packing, while it conserves the internal heat, allows a mild gentle "percolation" upward, and this is still further aided by the span-roof, all but universal in this country, affording an open space above the packing, and by the ventilating holes back and front allowing of the quick evaporation of the moisture.

Bush Fires.—From the *Bulletin* we learn that these have been doing damage to bee-keepers in Australia. They have passed through one of the driest seasons on record. The temperature has been as high as 104 deg. in the shade. This bee-newspaper is now edited by Mr. G. Abram.

A Honey Exchange.—In Canada bee-keepers have a honey-crop committee in connection with their B.K.A. Yearly this committee issue a circular after receiving reports from the various districts as to the nature of the crop, and forthwith decide on a minimum price, below which they recommend honey should not be sold. This has a tendency to steady the market. The idea is a good one, but I fear it would be impossible to secure a similar bureau in this country working in connection with the B.B.K.A.

Honey and Wax.—At a recent convention some of the speakers argued that the colour of the wax would agree with the colour of the honey, but this was disproved by the fact that buckwheat honey, which is very dark, gives white wax. Mr. Crawshaw found that even *black* honey-dew gave a *white* wax. "Facts are chiels that winna cling."

Queries and Replies.

[3995.] *Transferring Bees.*—Being a subscriber to your paper and a novice at bee-keeping, I should be glad of replies to the following questions: 1. I have a swarm in a skep, and wish to transfer the bees to a standard-frame hive. Should I drive them, or put them on top and let them go down to the brood-chamber? 2. Which is the best time to do it, and should I leave honey in skep? 3. I notice some of your readers want an Act of Parliament against foul brood. I think if we were to have red tape and Government barnacles they would soon stamp it out, and the bee-industry, too; so save us from that. I think we want a little more co-operation in the country villages, and a master—if I might use the term—to instruct and encourage new bee-keepers. I was a member of a bee-association one year. I was warned that I should get no good from it. Here was my experience: The expert came round, looked in my hive, closed it, took my subscription with him, and was out of the garden after about ten minutes' work. After this, my opinion of the expert's visit was very small. The local secretaries tell you the expert will come and look at your bees at any time, if you let them know. Knowing practically nothing of bee-keeping, I cannot tell when to send for him. So one has to grope along and take one's chance of succeeding. I shall thank you for your answers to my questions, and as to my comments please take them for what they are worth.—J. DICKINSON, Burton-in-Lonsdale.

REPLY.—1. Put the skep on the top of frame-hive in the way described on page 150 of "Guide Book," and if the skep is crowded with bees they will go down, and in due time the queen will commence laying below. 2. The best time to do it is in spring, about the beginning of April. Leave the honey in skep, and when the queen has taken to the lower chamber place excluder between the two hives. The brood remaining above will hatch out, after which the skep may be removed. 3. The bee-industry has not been stamped out in the countries which have adopted legislation; in fact, profitable bee-keeping has been made possible in them, and we have no reason for supposing that our country would be an exception. There is co-operation in some districts, and if bee-keepers combine and find the means there would be no difficulty in obtaining an expert to teach them. This, however, cannot be done without money, and the associations have not sufficient funds at their disposal for the purpose. If every bee-keeper were to join his county association, and contribute his share towards the work, it would be possible, but so long as about nine out of every ten keep aloof it is evident that the association must be hampered for want of means.

[3996.] *Renewing Brood-combs.* — I have two hives which are somewhat old, and I wish to transfer the stock into new ones. 1. When can I do this? 2. Some of the brood-combs are becoming very dark in colour. How many of these can I take out and replace with new, and when shall I do this, also how many at one time? I may state the stock seems very strong. 3. Is there a bee-keepers' association in this district? If you will kindly answer my questions I shall be greatly obliged.—R. W. GILES, Harrow.

REPLY.—1. Wait until a fine warm day towards the end of March. If attempted now, harm might ensue from chilling the brood. 2. It is advisable to renew two combs in each hive every season. If the combs are old, remove all those which do not contain either stores or brood, closing up the rest with the division-board. When these are crowded with bees, and the weather is warmer—say in April—insert the new frames fitted with foundation in centre of brood-nest. Do not put in more than one at a time. Wait till this is drawn out and the frames are again crowded with bees before the second and subsequent ones are inserted. 3. You should join the Middlesex Bee-keepers' Association: hon. secretary, Major A. W. Fair, 22, Anlaby Road, Teddington, from whom all particulars as to membership can be obtained.

Notices to Correspondents.

VENEZIA (Liverpool). — *Starting Bee-farming.*—1. It is impossible to say how many hives would be required to bring in £100 a year, as it depends upon the capability of the bee-keeper and the yield of the locality. A person thoroughly well up in the business, and one able to take advantage of every opportunity in a good locality, can obtain an average of £1 per hive profit, provided the locality is not overstocked, whereas another in a similar locality would make no profit at all. 2. The capital required would depend on how you intended to start, and whether you owned the land or had to rent it. Lincolnshire is a good honey-county. 3. The proper way to begin is to go for a year to some large apiary that is worked on a commercial basis, learn to do the practical work, and then take the advice of your instructor as to your capacity for the business. It would be useless your beginning without practical experience, as bee-keeping, like any other business, has to be learnt. 4. You may find someone who would take you into partnership by advertising. See also Query 3984, page 20 of B.B.J., which may help you.

Editorial, Notices, &c.

REVIEWS.

Beiträge zur Naturgeschichte der Honigbiene, nach den Vorträge Dr. Albert Fleischmann. Edited by Theodor Weippl. (Published by *Illustrierte Monatsblätter für Bienenzucht*, Klosterneuburg. Parts 4 and 5. Price 9d. each.)—These two parts complete the "Contributions towards the Natural History of the Honey-Bee," being the substance of lectures by Dr. Fleischmann, Professor of Zoology and Comparative Anatomy at the Royal University, Erlangen. The editing has been carefully done by Theodor Weippl, editor of the above-mentioned paper. Part 4 treats of the embryology and the fertilisation of the egg, the formation of the germ-cells being illustrated and explained. Chapter VII. treats of parthenogenesis, and Dr. Fleischmann confirms the teaching of Dzierzon, Siebold, and Leuckart, and characterises the recent statements of F. Dickel and others, who assert that every egg laid by a queen is fertilised, as a worthless fable. Chapter VIII. completes the work with a description of the sense organs. Most of the illustrations, which show great care in their preparation, are from drawings by Dr. Fleischmann, who has been assisted in the work by Dr. Zander, and are so plentiful that we find no fewer than 195 of them in the 140 pages composing the work. There are a copious index and a half-tone portrait of the author. The book is a valuable and indispensable addition to our literature on the subject, and, while congratulating the author on its production, we are pleased to be able to recommend it to our readers.

Arrêté du Conseil Fédéral of December 3, 1909, declaring foul brood to be a contagious disease and a common danger.—This is the text of the latest Act passed by the Swiss Government. It consists of six clauses and requires every owner of hives having foul brood to make a declaration and carry out the instructions of the inspector respecting disinfection. It prohibits the sale or loan of hives and appliances coming from an infected apiary. Section 5 describes the measures to be taken to get rid of the disease. Section 6 empowers inspectors to examine hives in an infected area. Penalties for non-compliance with the Act amount to from 10 fr. to 500 fr., the same as those imposed in relation to other contagious diseases.

Pansies. By James B. Riding, F.R.H.S. (London: Agricultural and Horticultural Association. Price 1d.)—To aid all lovers of flowers to grow pansies to perfection is the object of this little book by a practical expert. It is fully illustrated by the editor, E. O. Greening, and published, at the popular price of 1d., as No. 21 of the "One & All Series of Practical Garden Books."

Roots. By Hon. H. A. Stanhope. (London: Agricultural and Horticultural Association. Price 1d.)—The editor of this cheap and popular handbook, E. O. Greening, explains its aim and purport in a brief preface, in which he calls attention to recent legislation passed to facilitate the acquirement of small holdings. "Many of those," he says, "who are embarking on these enterprises, new to them and not easy to anyone however experienced, will gladly welcome useful hints given in plain terms and obtainable at small cost." The author, the Hon. H. A. Stanhope, "is an enthusiastic and experienced cultivator, combining the advantages of known science with practical experience. The information he gives will be found useful not only to small holders, but to allotment holders and gardeners as well."

DERBYSHIRE B.K.A.

ANNUAL MEETING.

The twenty-ninth annual general meeting of the Derbyshire Bee-keepers' Association was held on Saturday, February 19, at 2.30 p.m., in the Victoria Hall, Y.M.C.A., Derby, among those present being Mr. R. Giles (chairman), Mrs. Ancote, Mrs. J. Bakewell, the Misses Rowland (3), Mrs. Pearman, Mrs. Rouse, Miss M. A. Coltman, Messrs. P. W. Lewis, A. H. Hanson, T. Sleight, R. North, A. Milner, H. Hill, R. Calderbank, J. Pearman, S. Durose, A. J. Mountser, E. Swain, A. Ancote, W. Henson, D. Wilson, W. Allen, J. Bakewell, G. L. Bakewell, J. Rowland, D. J. Moore, W. Mill, G. Straw, C. Mills, T. Harrison, T. Austin, W. Rouse, Masters Mills, Rouse, and Harrison, and Mr. R. H. Coltman (secretary).

The minutes of the last annual meeting having been read and confirmed, the secretary presented his annual report and statement of accounts, which showed a credit balance of £3 9s. 9d. on the year's work, this bringing the reserve account to £64 2s. 3d.

The experts again reported a very indifferent season, many stocks being lost owing to the wretched weather early in the year. The honey "take" was small in most districts, although in a few cases very good results were obtained.

It was pleasing to note that there was a large decrease in the number of diseased stocks in the county, each division showing satisfactory results of former treatment.

Proposed by Mr. Giles, seconded by Mr. Durose, that a vote of thanks be accorded to the County Council for their grant of £50 towards the expenses of lectures, expert work, &c.

A vote of thanks was passed to the retiring officers. Mr. T. W. Jones, of Etwall, was made a "life" member. His Grace the Duke of Devonshire was re-elected president. All the vice-presidents, with the exception of the Hon. F. Strutt (deceased), were retained.

The committee were re-elected, excepting Messrs. Jones, Hill, Richards, and Austin, but with the addition of Messrs. Giles and Pallett.

Mr. R. Giles was elected hon. treasurer, and Messrs. Jones and Lewis hon. auditors. Mr. R. H. Coltman retains the office of secretary, lecturer, and delegate to the B.B.K.A. meetings. Messrs. North, Rowland, and Durose were appointed experts for 1910.

The secretary reported that two candidates for the third-class certificate of the B.B.K.A. had been successful in passing the examination, viz., Miss Shuttleworth, Hathersage Hall, and Mr. W. Reynolds, Pilsley. This was the first occasion in the annals of the D.B.K.A. that a lady bee-keeper had entered for such an examination. Two candidates also sat for the B.B.K.A. first-class certificate, Mr. R. H. Coltman being successful in obtaining same.

The scheme for the reorganisation of the B.B.K.A. was then considered, the feeling of the meeting being adverse to the change of name as outlined in Clause 1 (*b*). Objection to Clause 2 as far as co-opted members are concerned. Clause 4 objected to, it being suggested that a much better plan would be for each association to pay a fixed sum per 100 members or per member. The other clauses were agreed to. Owing to the late hour, the remaining business was adjourned.

The company then partook of a substantial meat tea, at the conclusion of which an excellent musical entertainment was provided.

Two valuable prize drawings were held, among the prizes being "The Lore of the Honey-Bee" and "The Life of the Bee," kindly presented by Colonel Chandos-Pole-Gell, and "Wax Craft," kindly presented by T. W. Cowan, Esq. This concluded one of the most successful gatherings held by the Derbyshire Bee-keepers' Association.—R. H. Coltman, Hon. Secretary.

OBITUARY.

MRS. W. WOODLEY.

We regret to have to record the death of Mrs. W. Woodley, who passed away on Friday, February 18, at Beedon, after a short illness. Six years ago, in April, Mr. W. Woodley lost his first wife, and on the marriage of his daughter, who assisted him with his bees as well as kept his house for him, he married again, a lady whom he had known from childhood. She took to bee-work with enthusiasm, and has been of great assistance in his bee and honey trade. The void in the home is expressed in his own words when he writes that "bee-keeping is a work so much connected with the home-life; at least, it is as we have carried out our bee-work for so many years."

Our readers—to whom Mr. W. Woodley's name is as a household word, from his long connection with this journal—we are sure, will join us in heartfelt sympathy with him in his sorrow.

AMONG THE BEES.

CLIPPED QUEENS.

BY D. M. MACDONALD, BANFF.

Few bee-keepers clip their queens' wings in this country, because, as a rule, they find no great necessity for this operation. Personally, I have so few swarms that clipping would be superfluous work. My surroundings also are such that there is little temptation for bees to abscond, and, while there is no set watching, somebody is all but certain to see them issuing and sound a warning note. Many, however, are differently situated, and some means for checking decamping is almost a necessity with them. A correspondent with such surroundings wrote me on this subject, and hence this article.

He describes his apiary as being placed in such a position that an issuing swarm is almost to a dead certainty likely to cross a broad river which lies right in front of them, or if they circuit to right or left they must make for thick woods, where the chances are a hundred to one that they will nevermore be heard of. Further, they are in such a situation that nobody would be at all likely to see the swarm issuing. Then the apiarist, by reason of being otherwise employed, can see them only about midday and evening. He does not desire to invest in swarm-catchers of doubtful utility, and it is not convenient to engage a watcher. In the circumstances, he queries if I would advise him to clip his queens' wings. He desires no increase, and his aim is to secure as large a surplus "take" as possible. To realise this, he wisely concludes that his strong forces should not be broken up, but that they should be retained as one body right up to the end of the foraging season. To the query thus put I had no hesitation in replying "Clip."

Clipping is a certain and reliable remedy for the prevention of absconding swarms, because when they come out the queen, owing to her inability to fly far, if at all, cannot accompany the bees in any extended flight. After a period of agitated prospecting all round and eager search for her majesty, they find no central attraction on any shrub, bush, or tree, and therefore ultimately come to the conclusion that she has failed to accompany them or has returned to the brood-nest, so they forthwith proceed to follow so laudable an example in the belief that home is best. Attracted by the agitation of the returning bees, by the swarming odour, or by her own dim perceptions, the queen generally crawls home; but if she does not there is no great loss. If their keeper is on hand at an early hour he is likely frequently to find her in the centre of a small cluster of bees near by, and can quickly carry her to the hive or otherwise utilise her. Other advantages of clipping are that these queens are more easily "spotted" when being searched for on the combs, and by clipping alternate wings each season the apiarist has a record of his queens' ages.

While this system is a perfect cure for loss of swarms, it is not a guarantee that the bees will not, on returning, proceed to carry out the further construction of queen-cells, and in the course of ten days or less again attempt a "trek," even if the queen has not been returned; and this time they will be headed by an *unclipped* virgin. Of course, no unmated queen should be clipped. A few extremists hold that denuding the queen of part of her wings is mutilating her, and some consider that, at times, it may cause her loss from "balling" by her own bees; but few authorities sanction this theory. These are the only disadvantages which occur to me.

Now for the delicate operation of clipping. It would be a good idea for a novice to try his prentice hand on drones before attempting to operate on a queen. This would give him accuracy and confidence, as the manipulation requires a steady nerve, quick action, and a considerable degree of precision to carry it out neatly and effectively. Some prefer a knife—one with a razor edge is necessary to make a neat job of it—but most will find a pair of small scissors the best and most successful weapon. Small surgeon's scissors would be preferable, because the material is reliable and takes a very fine edge; while they are small, neat, and easily handled in carrying out this delicate piece of strategy.

I believe the majority of extensive bee-farmers in America prefer to cut back the two wings of one side to within less than ¼ in. of the junction with the thorax; but less will do, and clipping only one wing may suit most people. When the queen is seen on the comb, catch her gently by the thorax between the thumb and forefinger of the right hand. Transfer her to the left hand, with her head pointing from you. Slip the finger back to free the wing or wings, insert the scissors, and in an instant the deed is done. Liberate her cautiously, letting her run down the frame; do not drop her from a height. When the operation can be performed with the queen on the comb it is preferable, as then there is no handling, and therefore no danger of communicating any foreign odour. Special spiral cages are on the market for queen-clipping, but I think there would be more danger of cutting off a leg or two as well as a wing when they are used. If my apiary were surrounded by high trees, making tempting clustering-places for swarms; if I were cursed by having a swarming strain, such as I read of at times, determined to trek whenever they had worked up into powerful stocks; or if situated as my correspondent is, I would most certainly, although no strong advocate of the system, use the scissors and clip the queens' wings.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION.

[7750.] In "American and Colonial Papers," page 80, our friend "D. M. M." writes: "A contrast worth noting is the fact that in America the bigger the bee-keeper the keener he is on securing legislation to suppress foul brood, while in this country the extensive bee-keeper is *supposed* to look on such a project as anathema." I fear there is not much supposition about it, and certainly they were the chief opponents to the attempt in 1904 and 1905 to get an Act passed. I happen to have been looking up the correspondence in the BEE JOURNAL of those years, and the only thing that puzzles me is why the Board of Agriculture ignored the majority *for* the Act in favour of the minority *against* it. Certainly the number of those who voted was a very small proportion of British bee-keepers, but still a majority has its rights. Though far from being a satisfactory return of voters, I think it clearly showed which way the wind blew. Yet

the Board of Agriculture were influenced more by the number of stocks owned than by the number of owners, in the small return they had to judge by!

As an impartial student seeking for instruction, I placed the various letters side by side, and, as far as I understand plain English and common sense simply expressed, the arguments for an Act utterly demolished those urged against one. The four chief objections were taken one by one and proved to be but "bogies" by the late Mr. Harris (B.B.J., September, 1904), and I searched in vain for any real attempt to answer his letter. "The disease known as selfishness," mourned over by one sufferer from foul brood—brought into his apiary by an ignorant, selfish, and obstinate neighbour, resulting in twenty years' work being destroyed—aptly describes the under-current running through all the articles written by the anti-actionists.

It is a deadly disease, and, unfortunately, a very common one. But as, after all, the aim of legislation is not to give a monopoly to a favoured few, but to ensure that everyone conducts his business or pursuit with the least possible loss or hindrance to others in the same craft —or "the greatest good for the greatest number"—I am now all in sympathy with those who wish to make a fresh attempt to obtain legal protection.—F. SITWELL, Wooler.

[7751.] The arguments used against legislation by recent correspondents have been so effectively dealt with by the Editor that it seems almost unnecessary to say anything further in refutation of the points put forward as reasons why a foul-brood measure is said to be undesirable. As one of those who are responsible for "the fussy parade of foul brood before the public and the House of Commons," perhaps I may be allowed to reply briefly to one of Mr. Mace's objections (7747, page 78), where he says: "There is not any proof that foul brood is only produced by contagion," and this is his reason for believing that it would be useless to try to cure it by simply destroying isolated cases. Considering that there is absolutely no evidence which—when fully considered and illuminated with the light of scientific research, aided by common sense—indicates that this disease is brought about in any other way, Mr. Mace's objection can hardly be seriously accepted as a reason why we should not protect ourselves by legislation. Bee-keepers who know nothing of the study of bacteria and the relation of the latter to the diseases of brood, but have proved to their own satisfaction in everyday practice that the disease is most contagious, are plentiful enough. When their evidence is strengthened by that of men of science and practice like our Editor, who have isolated and cultivated the bacilli from the bodies of victims of the disease and have been able to transmit the same disease to healthy larvæ by the introduction of the germs so cultivated, there can be little doubt in any unprejudiced mind that the disease is caused by contagion and in no other way. It does seem ridiculous that it should be necessary to keep on reiterating this fact in the face of all the evidence before us.

As an example of the beneficial result which would certainly follow the advent of compulsory powers, let me put before readers the case of Cumberland. Ten years ago many parts of the county were simply reeking with the disease, almost 60 per cent. of the stocks being affected. The Cumberland B.K.A. was then formed with the object of stamping out the disease, if possible. Experts were engaged, who visited as many bee-keepers as possible twice each season, and under their advice and treatment the number of diseased stocks has been reduced to 7 per cent. in 1909. All along the experts of the association have treated the disease as contagious, and in their work have taken the greatest care to avoid spreading it by contagion, and the above result —with which, I am sure, any fair-minded reader will agree—shows that the belief in the contagious nature of the disease and its treatment as such is correct. We are now able to trace the cases which are continually breaking out in certain districts either to infection from diseased stocks near by or to importation from outside the association's district. The origin of some few outbreaks may be obscure, but they are mere exceptions which prove the insidious nature of the disease and the necessity for great care. Early in the career of the Cumberland B.K.A. it was recognised that compulsory power of inspection would be the only means of reaching a certain section of the bee-keepers, and each season convinces us more and more of the necessity for this in order to protect our pursuit from the ignorance and stupidity of those who will not be persuaded, both in the county and further afield.

Much has been said about the large bee-keepers being hard hit if an Act of this kind is passed, and the liberty of the subject being interfered with to an unbearable degree. To my mind, this is almost entirely imaginary. I well recollect the time when the Board of Agriculture were seeking to inflict upon us the regulations now in force for the suppression of sheep scab. Many sheep-farmers were in a state bordering on panic, and meetings of protest were held, when the trampling on

the "liberty of the subject" was freely condemned, and threats to retire from the pursuit or emigrate to some more tolerant country were many and emphatic. What actually happened is this: many who raised such futile protests, after an extended trial of the dreaded regulations forced upon them, admit how beneficial they have proved in ridding the flocks of scab. Their liberty has not been infringed, but extended, through the risk of infection being reduced to a very insignificant point, their careless neighbours having been looked after and obliged to keep their flocks clean. Many of these farmers are bee-keepers, and their heaths being invaded by bee-keepers from far and near in autumn, instead of being against additional and stringent regulations for the protection of their bees, they are in favour of the powers sought being granted. The only bee-keepers who would be hit in any way would be those who were compelled, against their will, to rid their apiaries of disease, and the bigger the diseased apiary the more need there is for power to invade it. Unfortunately, not all who claim to be experts by reason of the extent of their apiaries keep a clean bill of health. A recent correspondent complained that cases were on record where old hands in the craft had been annoyed by beginners trying to dictate to them the need there is for the passing of a foul-brood measure. That may be, for it takes some people a lifetime to realise what others can sometimes grasp at the outset. After a life experience of bees and bee-keepers, during which I have travelled thousands of miles entirely in the interests of the craft, handling a very large number of diseased colonies, I am more than ever convinced that we are neglecting our duty as British bee-keepers by not adopting more stringent measures to deal with foul brood. This opinion is shared by many whose experience is not limited to their own garden or parish, and who approach the question with a mind free from prejudice.—G. W. Avery, Heads Nook.

ROSS-SHIRE NOTES.

[7752.] The contributions of "Medicus" on the sectional hive and dual-queen system should prove extremely valuable to those who want heavy supers of heather honey.

Judged by results—viz., an average of 25 lb. per colony at the moors in such a season as 1909—our friend's scheme is an unqualified success, and it is to be hoped that the method will have an extensive trial during the coming season.

Personally, I run colonies on 5½ in. and 6½ in. depth frames every year, but have never secured such crops from the moors except in favourable seasons. The drawback with shallow chambers is that singly they cramp the queen, and so limit the working force, while used double they encourage brood-nest storage. I believe that "Medicus" relies mainly on the heather, white clover being a small and uncertain crop in his district.

In this district the reverse holds true, and admitting that heather prices are 50 per cent. better than those obtained for clover honey, yet, taking an average of a series of years, it will be found that the latter puts more money in the bee-keeper's pocket.

Hence the idea of a compromise between the old and new, adapting the improved methods to suit local conditions, would be advantageous; that is, using two queens to build up a strong colony for the clover-flow, and supering over the combined forces in a standard-depth brood-chamber, exchanging the latter for a shallow brood-nest when heather begins to yield (see page 25).—J. M. Ellis, Ussie Valley.

TALES FROM ARISTOTLE.

[7753.] My last pilferings from historic pages ended where Aristotle, concerned as to the generation of bees, had got into an *impasse*. How that little worm, which he insists is the viviparian commencement of a bee's life, got into the cell does not concern our present purpose. We will pass his reasoning over. We shall probably find more amusement in some of his other yarns. Now, every second of its life can be accounted for from the moment when, deposited on end, the egg glistens at the bottom of its hexagonal receptacle to that time when it emerges a perfect bee, grey as to colour, to commence its mission.

Bees always had the credit of being good prophets of the weather, and the wise apiarian will do well to consult them before starting on his day's journey. He will find them locally more reliable than his morning paper, which, being human, errs. If they fly forth boldly and in numbers, his umbrella may well rest in the corner at home; but if they are tardy in their flight, but few venturing forth, and those timidly, then let him fear Jupiter Pluvius. Now, the ancients knew this well—they who consulted the flight of the birds for an augury of a fortunate or unfortunate day; but they also gave the bees credit for a "wrinkle" which, *if it is true*, I am afraid our modern bees have quite forgotten. Aristotle tells that when a storm is blowing the bees take with them a small stone as ballast. Pliny improves on this, and gravely states that they "carry it on their shoulders, flying low to escape thorn bushes." How interesting it must have

been in those poetical days to watch them, ere starting on their daily toil, selecting a fit and suitable pebble! What a nice calculation it must have needed to adjust the proper handicap! Oh, the degeneracy of the times! Why have they forgotten their ancient cunning? But perhaps bees were differently shaped in those days, and their centre of gravity differently located, for we are informed that "they cannot fly direct, because their legs are bent inwards, as are horses." Again: "They always defend themselves with their front legs, and their hinder legs, in the middle, are longer that they may walk better and be more easily lifted off the ground when they wish to fly." Fearful and wonderful insects they must have been, possessing something of the saltatory powers of the grasshopper and the grip of the beetle. Thank goodness that the lapse of centuries has improved Darwinially some of these unpleasant peculiarities off the face of the earth. We might perhaps wish that there had been some amelioration of their sting; but it is best as it is, or else any blue-bottle fly might rob and raid at his pleasure.

It rejoices the heart and it is sweet to the ear of the bee-master to stand near the hive on a summer eve and hear the hum of the busy crowd. The twittering of the sparrows in the ivy, the trill of the robin on yon old tree, the mellow, rich note of the blackbird from the holly-bush—all are singing their vesper hymn as the fiery sun now rolls away to the west. Again, in the morning they "prevent the sun from rising," as sings the royal prophet of old, with their chorus. These are their morning and evening prayers, all voiced in that language which the Creator has given them in which to utter their praise. And He, to Whom the fall of the sparrow from the house-top is not unnoticed, understands and rewards. It is a pretty thought, that of Aristotle, anent the sleep of the bees. All have gathered in, and the happy murmur is at its height. Suddenly one of the workers flies once or twice round the hive, re-enters, and issues a warning note. Immediately silence ensues, unbroken until early morn. When Phœbus again commences to shoot his golden arrows aslant the sky, then again one within the hive is heard to raise the signal. It is repeated by another, and again by another. Immediately they all sally forth, and the daily work is again begun.

That eternal war 'twixt bees and wasps existed, and was as fiercely fought, in the days of old as it is now. Aristotle is Draconic in his punishments. Trap the wasps, he recommends, by putting a piece of meat on a plate, and when sufficient are gathered together put another plate on the top and lay them on the fire. He would cremate them living; we have the mercy to suffocate them first. But those big lake toads must have been cunning. He tells that they creep up to the mouth of the hives, *blow in at the entrance*, and as the bees sortie out, to see who has been rude, he gobbles them up. Equally stern is the vengeance: "Fish for them in the pools and kill them."

There was not much difficulty in those days in making the punishment fit the crime. If there was any doubt about it, "off with his head."—J. Smallwood.

A TAPER FRAME.

[7754.] It has been a pleasure in a recent issue of the B.B.J. to read Mr. Soal's letter (7743, page 67), wherein he advocates the advantage of using the taper frame.

We cannot all agree on this point in bee-keeping, but Mr. Soal's arguments are certainly well founded. "For ease of manipulation there is no frame that can approach it" contains the whole gist of the subject in a sentence. It may be considered as a retrograde step, but if that be so I fear there are many points in bee-keeping which might be classed under the same heading. But, now the subject has been opened, I hope we shall have the views of bee-keepers on the matter, as we all know well the ideal frame has not yet arrived.—E. R. Seadon, Bromley, Kent.

I.O.W. BEE-DISEASE.

[7755.] I am sending you a few live and dead bees, in separate boxes, from a stock suffering from this disease. In eleven small apiaries that I know, which contained altogether at end of last season thirty-three stocks, only five are now alive, and several of these are showing signs of the disease. Of one lot of six in which I have, or had, a half-share only one is left. Strange to relate, this stock seems in almost better trim than it was in late autumn, although it showed unmistakable signs of disease in July last. Some stocks have died out during the last week or two; one especially, which a fortnight ago was apparently all right, is now dead. All stocks have left honey of good quality behind them (I enclose sample in comb). A few diseased stocks were robbed out during late summer and autumn; hence above result. In addition to above there is an apiary of about fifty stocks, of which forty odd are reported gone; but I cannot vouch for this, as the owner is unapproachable, and "*allows no man to look at his apiary.*" From what I hear, the same thing is occurring in the surrounding parishes. What is to be done?

All stocks showing the slightest signs of disease should be destroyed at once, and all combs from dead stocks burnt also. I wonder what Mr. Green and others of that ilk would say if they were fixed here. If something is not done by Act of Parliament, and soon, this infected area will be a very large one indeed. Why the Isle of Wight is now clear of the disease is, I surmise, because there is no longer any infected honey left there, nor any old combs, for what were not melted down for wax were no doubt destroyed by wax-moth (I guess they have some of the latter there), and I am assuming that we shall have to go through the same cycle before we get clear of this pest.

I may be wrong, but I am strongly of opinion that this melting down of diseased combs is the key to the problem of the outbreak of this disease in various parts of England and Scotland at about the same time. Some of this melted wax would no doubt find its way into the foundation-makers' hands, and, supposing all such makers boil all wax for three hours to kill any disease germs which may be in it, is it not possible that the germs of this particular disease may require more than three hours' boiling to kill them? We will give the makers the benefit of the doubt, but I guess a lot of wax does not get one hour's boiling, and very little three (what about the "Weed" make of foundation?).

I had a bad outbreak of similar disease in my own apiary about twenty-five years ago, and out of about twenty stocks I only got one through to do any good afterwards. I was pretty well isolated then, and mine was the only apiary attacked. I destroyed every comb containing stores, and the disease did not reappear, although I did *not* disinfect the hives.

Some of your more prominent correspondents may think I am perhaps crying "Wolf!" without cause, but I think you will know, Mr. Editor, that I am no novice in the craft.—A. Simpson, Chalfont St. Giles, Bucks.

FELT COVERING FOR HIVE-ROOFS

[7756.] In reply to the inquiry on page 69 of the B.B.J. with reference to "Stoniflex" felt for hive-roofs, I always find a small supply of any of the modern vulcanite felts useful in an apiary.

For covering a skep to keep all snug and warm, if well weighted down with an earthenware pancheon on top, I know nothing to equal it; whilst for temporarily covering a leaky hive-roof, when made secure from being blown off by means of a brick or two, it is very useful. After examining hive-roofs covered with lead, zinc, vulcanite felt, linoleum, &c., in my opinion nothing can approach the paint and calico method, as described on page 42 of the "British Bee-keeper's Guide Book"; this is perfection, and combines lightness, efficiency, and cheapness in a marked degree.—Appliance Dealer, Carrington, Notts.

NATAL BEE-KEEPERS' ASSOCIATION

[7757.] I have to thank you for your kind letter of the 8th ult., with enclosures relative to expert examinations.

You will doubtless be pleased to learn that we now have similar legislation in force here to that enacted in Cape Colony with regard to the importation of bees, honey, wax, &c.

This season has proved an exceptionally bad one for bee-keepers so far, but the optimism common to the craft is as flourishing as ever, and we live on the expectations of the future. — W. C. Mitchell, Cedera, Natal.

[The Act above alluded to is dated November 22, 1909 (No. 15), and provides that bees and their larvæ, honey, beeswax, including comb-foundation, honeycomb, and other apicultural products shall not be imported into Natal without the consent of the Minister of Agriculture, and shall be subject to such conditions as he may prescribe.—Ed.]

THE REORGANISATION OF THE B.B.K.A.

[7758.] I have followed with much interest the correspondence in the B.B.J. on this subject, and feel inclined to ask whether the various associations throughout the country do not expect just a little too much from the parent body. The B.B.K.A., powerful as its influence is, cannot materially benefit the county associations—that is to say, it cannot infuse into them that enthusiasm which is the very life-blood of any organisation. This can only be brought about by the frequent meeting together of the members. Each association throughout the country must first set its own "house in order," and then affiliate with the B.B.K.A., which might serve many purposes—say as an arbitration board, to settle any disputes as to show prizes or the decisions of judges at shows, their ruling to be final; and numerous other matters which might with advantage be referred to headquarters. But, as I have stated, the real progress of the affiliated associations depends entirely on their own efforts. Personally, I would like to see more of these societies run on the same lines as our Croydon and District B.K.A. We draw up a syllabus for the year (a printed copy of this being supplied to each member), and meet each month for discussions; thus the interest of the mem-

bers is kept up and the association strengthened. Now that the B.B.K.A. has started on a new lease of life, so to speak, I hope some really good coloured diagrams may be got out by the Council, illustrating the frame-hive and bee-keeping generally, for use by lecturers and in schools. There is a growing demand for diagrams and models of the bee, &c. Each association should possess something of this kind for use at meetings or lectures, and so the knowledge of apiculture would be spread by its means. Meanwhile, let those who blame the B.B.K.A. look at home first, and work, work, work. —A. WAKERELL, Hon. Sec. Croydon and District B.K.A.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Receipt for Bills (page 43).—Now isn't that annoying! One sting on the bill will kill the goose that lays or the gander that doesn't. Most annoying, just when I had decided to have a couple of goslings to crop the grass around the hives. This scheme was my *chef d'œuf*, which has been hatching all the winter, and, full-fledged, was to have provided two birds for the one stove, and some home-made *pâté de foi(e) gras(s)* into the bargain. Now, alas and alack, my faith in the grass scheme is shattered, and "addlepate" is my mildest term of justly-earned self-reproach. But something must be done for the silly geese when they come, and I suppose this will resolve itself into a handkerchief apiece, scented with *eau de créosote!* I wonder if tin helmets with automatic vizors would be useful; but those wretched bees would probably discover some other vital part, and the result of the canning competition would only be to make them look like armoured cruisers in their sole safe retreat, the pond. In the meantime, they must be a laughing-stock with their nose-bags, like "the Jamesons'" hens, which wore stockings to prevent their scratching. Most annoying! I wish I had never read that paragraph!

Finding a Queen (page 45).—I think that the existence of a garnished-up brood-nest does not prove the queen to be mated, although it does, I think, satisfactorily argue the presence of a queen. I think that I have had cases of such preparations long before the first egg was laid.

County Associations (page 48).—This letter "gives one to think." At this time, when the parent Association is spring-cleaning its house, it may well be desirable that the children should turn out their cupboards. There is at least one of the county associations which might be described as moribund, whilst others, with no greater advantages of organisation, are highly successful. What is the secret? Success centres, I strongly believe, upon the secretary. Without an enthusiastic personality the best-laid schemes may "gang agley." Somebody must be head bellman if the cat's neck is to be properly rung. My belief is that enthusiasm will "make time," and that it will infuse itself into the other necessary workers. A central secretary cannot be too much in touch with branch matters, but I think, with "D. S.," that it is essential he should have branch help of the right sort. Much of his energy might be conserved by transference in the stirring up of this enthusiasm in his co-workers. Have you got the right man for secretary?

Buckwheat (page 49).—I gather from the "A B C of Bee-Culture" that this plant yields best in the early morning, and our autumn mornings are often too chilly to allow the bees to put their noses out before breakfast. Against this, we have recently had a report of bees working in the heather with 48 deg. at 8 a.m. after a night frost. But some of these autumn honeys are reported to be bad for wintering, so that it is not surprising to find them efficacious as a medicine. As a table honey it is doubtful whether buckwheat would attract, as it is of a "purplish colour." Yet those who have known and liked it from their youth upwards find the best clover honey insipid and unsatisfactory by comparison. Truly, taste is artificial and liable to difference. I have found Continental bee-keepers relishing a honey which was certainly three-parts honey-dew. They knew that it was real honey, and not the usual table-syrup!

Reformation of Drone-breeding Queens (page 57).—My thanks are due to Mr. H. Martin for the interesting particulars he gives. These are striking cases of queen-recovery. Will he kindly say with what variety of the honey-bee this occurred, and will other observers who happen to have a drone-laying queen allow her to live, if possible, and make notes of her history, so that we may have the matter fully authenticated?

Disease Insurance (page 58).—I do not quite see why Royal patronage should be so expensive as to cause "higher fees and grumbling"! This, at least, is not the opinion of the Rev. A. E. Downes-Shaw! But this Birstwith letter is worth reading for the suggestions contained. Last week I had the privilege of a chat with Dr. Kramer (President of the Swiss Bee-keepers' Society) on this very subject, and I hope later to be able to give some particulars of what has been done in Switzerland in this matter of combating disease.

Queries and Replies.

[3997.] *Starting Bee-keeping in Alberta.*—1. I should like to know if any of your readers have had experience of bee-keeping in Southern Alberta, Canada. What are the prospects of successfully keeping bees there, and can they be wintered out in the open, or must they be put into cellars, the same as in Eastern Canada? 2. Can bees be obtained there, or would it be practicable to take out a stock to start with? 3. I should like to see some Canadian bee-papers. Can you inform me where I could procure a few copies to look through? — DEVEREUX, Shillington.

REPLY.—1. The district between Calgary and Edmonton is just being settled upon, and is a very rich agricultural one, but we are not aware that bee-keeping has yet been tried there. From what we know of the climate we should think bees would be best wintered in cellars, but of this you would be able to judge better after a season's trial. 2. It would be quite practicable to take out a stock of bees with you, but as bee-keeping is carried on in the fruit-growing districts of British Columbia, to the west of the Rocky Mountains, you could probably get what you want from there. Mr. E. F. Robinson, 16, Young Street, James Bay, Victoria, B.C., might be able to tell you the nearest place to get bees. 3. There is no bee-journal published in Western Canada, the only one in the Dominion being the *Canadian Bee Journal*, published at Brantford, Ontario. We send you a copy for perusal.

TRADE CATALOGUES RECEIVED.

JAS. LEE AND SON, LTD. (*Head Office and Power Works: Martineau Road, Highbury, London, N. Showroom: 10, Silver Street, Holborn. Bee-farm: Fulbourn, Cambs*).—This is a complete illustrated price-list of high-class hives and bee-goods by this old-established firm of manufacturers. It contains all the latest novelties, and, although the prices of raw materials have advanced, those charged for hives for the current year have been kept the same, while the high quality of the goods has been maintained. It is quite an up-to-date catalogue of forty-four pages, and can be had free by post on application.

THOS. W. HARRISON AND SON (*5 and 7, Cheapside, Nottingham*).—This firm sends us a revised illustrated catalogue of bee-hives and appliances, which also includes a selected list of garden requisites, as well as dairy and poultry appliances. They supply only best-quality appliances, and keep a large stock of all that the bee-keeper may require. They have also acquired the business of a wire-worker, and are prepared to supply any description of wire-work. Descriptive catalogue of forty pages, containing hints for beginners in apiculture, post free on application.

Notices to Correspondents.

S. E. H. (Edinburgh).—*Scotch Bee-keepers' Association.*—1. There is a South of Scotland Bee-keepers' Association (secretary, Mr. Q. Aird, Hardgate Schoolhouse, Dalbeattie, N.B.). 2. Continue giving candy, and you can supply the bees with pea-flour, which should be sprinkled on chaff or sawdust, and placed in a sheltered and sunny spot. If bees do not take notice of it, put a little piece of comb containing honey on the flour, and this will soon attract them (see "Guide Book," page 114).

E. A. (Aston End).—*Starting Bee-keeping in Alberta.*—See reply to "Devereux, Shillington," in first column of this page, who asks a similar question.

M. W. G. (Withernsea).—*Fertilisation of Fruit-trees.*—The report on the "Pollination of Pear-Flowers" can only be obtained of the Superintendent of Documents, Government Printing Office, Washington, D.C. "The Fertilisation of Flowers," by H. Müller, is published by Macmillan and Co., London.

ALPHA (Ecclesfield).—*Plants for Bees.*—1. *Phacelia tenacetifolia*, *Limnanthus Douglasii*, borage, and mignonette are good nectar-yielding annuals, seed of which can be sown in the spring or autumn for flowering the following season. Wallflowers, Canterbury bell, *Hedysarum coronarium*, *Melilotus alba*, *Onobrychis sativa*, and *Trifolium repens* should be sown in June or July, to flower the following spring and summer. 2. "'Chapman' honey-plant" (*Echinops sphærocephalus*) seeds should be sown in July, and plants transplanted in the autumn or early spring. 3. *Delphinium elatum* is of no value to the honey-bee, the only British bee whose tongue is long enough to reach the nectar being *Bombus hortorum*. 4. Over-manipulation means opening hives and pulling the contents about when there is no absolute necessity for doing so. An examination in spring and autumn should be sufficient, unless you wish to raise queens or make swarms. Any other manipulation should only take place if you suspect something wrong. 5. We thank you, and are pleased that you have found the "Guide Book" so useful.

W. R. B. (Purley).—"'*Chapman' Honey-plant.*"—1. This was so called by Ameri-

can bee-keepers because it was introduced as a honey-plant in 1886 by H. Chapman, of Versailles, N.Y., from whom it derives its name. 2. Its botanical name is *Echinops sphærocephalus*. 3. It is a native of Europe and Western Asia.

An Old Reader (Dyffryn).—*B.B.K.A. Examinations.*—Particulars have been forwarded. 1. If you apply to Mr. Morley Pettit, Ontario Agricultural College, Guelph, Ontario, Canada, he will be able to tell you what prospects there are for appointments in that country. 2. It depends on what your invention is whether it is worth patenting. It would only be worth doing so if it is something all bee-keepers want and cannot do without.

Beginner (Burgess Hill).—*Bees Suffering from Dysentery.*—1. You should take the first opportunity of a fine warm day to transfer the bees to a clean hive. In the meantime remove the outer combs, and reduce space occupied by the bees with division-boards, and keep the hives warmly covered. 2. When the candy is finished give them more. About the end of March will be quite soon enough to commence giving syrup.

F. H. B. (Erdington).—*Moving Bees.*—1. You can very well move the bees to Nottingham in the way you propose, and there should be no difficulty with the flying bees in transferring. The boxes should have an entrance in them, and, after transferring the frames and bees, place them on their stand until all the bees have returned towards dusk, when the entrances can be closed. Put perforated zinc over the frames for ventilation. 2. Six to eight feet would be sufficient.

Novice (Denbigh).—*Suspected Disease.*—So far as we can judge, the comb contains nothing worse than chilled brood. It would have been much better not to use the combs, but to have melted them down for wax. There is always a risk in using brood-combs from a suspected hive.

Inchcape.—*Dead Bees Cast Out of Hive.*—In the first place, the bees were only doing what is natural on fine days in the winter—viz., clearing out the dead. It was a mistake on your part to uncap stores at this time of the year, as it evidently started robbing. Amongst the bees sent are a large number of robbers, which may be distinguished by their black, shiny appearance, through being stripped of hair in their struggles with the bees of the hive.

F. G. (Dulverton).—*Dysenteric Bees.*—The bees sent have died of dysentery, probably caused by damp or bad food. There was a good deal of honey-dew last year, which is responsible for much of the dysentery prevalent. We should certainly not use combs of honey from a hive that had succumbed to disease for feeding other bees, but if the honey is boiled it could be used again.

D. T. (Ireland).—*Bees Dead from Starvation.*—The bees have evidently died from starvation, there being no trace of disease in the comb. The discoloration is the natural result of the rearing of brood in the cells. As each batch of brood hatches out the combs become darker, until they assume a dark brown appearance. The light-coloured cells have only been used for honey-storing.

G. S. B. (Dunstable).—*Candy-making.*—Sample is a fairly good candy, but it is slightly overboiled.

Compton (Sheffield).—*Recipe for Candy.*—Many good recipes have been given from time to time in our pages, but the one found most satisfactory appeared in B.B.J. of September 14, 1905 (page 363). This is a soft bee-candy, and is known as Bro. Columban's recipe.

Muel (Norfolk).—*Death of Bees.*—There is no evidence of disease, and we must have full particulars of all the circumstances in order to diagnose cause of death.

G. A. (Hants).—*Using Honey from Diseased Stocks.*—1. It would be safer to destroy the stores, and to avoid risk of infection when starting again. 2. Melt up the combs, burning frames, &c. It is not worth while or sufficiently safe merely to disinfect them.

H. B. G. (Ashampstead).—*Oil of Wintergreen.*—This is frequently used during manipulations to prevent bees from stinging. In pharmacy it is known by the name of *Oleum Gaultheriæ Procumbentis*, and costs about 1s. an ounce.

Honey Samples.

X. Y. Z. (Taunton).—1. The honey is quite good enough for table use. 2. It is already showing signs of granulation; if exposed to light it will solidify more quickly. 3. Very slight. 4. Gathered principally from beans.

Bee (Sidmouth).—1. A very good medium honey, gathered principally from clover. 2. Good heather-mixture. If honey contains honey-dew (which is not the case in samples sent), it can be used for bee-food in spring if boiled first. It would also be well to mix it with half its bulk of cane-sugar syrup.

E. Watts (Hove).—Your sample of honey is partly from clover. Flavour good, but it is rather thin in consistency.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Drone-breeding Queens. — M. von Dobratz says, in *Practischer Wegweiser*, that in exceptional cases the fertilisation of the queen may be delayed considerably. He has had cases where queens have become fertilised after six weeks. Within six weeks, under normal conditions, a healthy young queen does not become a drone-layer. If drone-eggs are found during that time, and the young queen shows after six weeks that she has been normally fecundated by laying worker-eggs, it is certain that she did not lay the eggs that produced the drones, but that these were laid by workers. M. Dobratz says that he and others have observed that in such a circumstance the workers continue to lay until the queen becomes fertilised. Should the queen become lost during her marriage flight, drone-breeding continues, and the bee-keeper may be certain that it is not the queen but workers who are laying the eggs. He has experimented with unfertilised queens, and has found that when they had once commenced to lay they lost the desire to fly out for mating, and remained drone-breeders.

Queen-introduction. — M. Barthelemy, writing in the *Revue Française d'Apiculture*, recommends the two following methods of introducing queens, which have proved very successful with him: — First method: Remove the queen, and on the third day, in the evening just before dark, give the bees a good smoking. Then place the queen which is to be introduced into a cup containing some liquid honey. The feed-hole is then opened, and the bees driven away from it. With a teaspoon, honey is poured over the queen, and she is then dropped into the hive between two of the combs; a couple of puffs of smoke follow, and the hole is then covered over.

Second method: The queen is removed. An old comb containing honey is selected, and the bees shaken or brushed off it. A cage is then fixed on the part of the comb containing stores, and the queen is placed in it. Four days later the cage is lifted by one of its sides, and the queen is allowed to walk out of her prison; then the cage is quickly removed, the frame of comb replaced, the bees slightly smoked, and the colony not disturbed for four days, when it will be found that the introduction has been successfully accomplished.

Weight of Bees.—M. I. Korjenevski gives some interesting information in *Celskie Hozaicen*, based on a long series of experiments. Many of these are of practical interest, and help to solve important questions. With regard to the weight of bees, he says this varies according to whether their stomachs are empty or filled. A larva which has reached its full development, according to Dr. Dengoff, weighs 184 milligrammes, and according to Professor Fischer only 150 milligrammes. As the bee develops this weight diminishes, and a fully-grown young bee, when she leaves her cell, only weighs 106 milligrammes; but as in leaving the cell she still has remains of undigested food in her stomach, when this is all gone she only weighs 92 milligrammes according to Dengoff, and 82½ milligrammes by the calculations of Baron von Berlepsch. Professor Tsecelsky says a worker-bee on leaving her cell weighs 104⅓ milligrammes, and a drone 196 milligrammes. It therefore requires eleven hungry bees—that is to say, bees having their stomachs empty—to weigh 1 gramme (15.4 grains), or 11,000 to a kilogramme (2.2 lb.). According to Dengoff there are 10,869, Berlepsch 12,121, and Tsecelsky 9,570. As in reality the honey-sacs and stomachs of bees are never or hardly ever empty, one can take the average as 10,000 workers to 1 kilogramme (2.2 lb.).

The situation is quite different when bees are about to swarm, for then, as we know, they fill themselves with honey before leaving their hives. In a forager returning from pasturage the honey-sac may contain as much as 61 milligrammes of nectar. In bees about to swarm the contents are a little less. Dr. Dengoff estimates the weight of a bee in such a case at 130 milligrammes. Therefore, a swarm weighing 1 kilogramme contains about 7,500 bees, which nearly corresponds with the results given by Berlepsch, who estimated that there were 4,000 bees to every pound of swarm (1.1 lb. English), and also those of Tsecelsky, who found that 1,000 bees in a swarm weighed, on an average, 130 grammes. Therefore a swarm of 2½ kilos (5½ lb.) contains about 20,000 bees. This may be considered a strong swarm, although at times one may be had double this weight. Ordinary swarms weigh generally from 1½ to 2 kilos (3.3 lb. to 4.4 lb.)—that is to say, they contain from 12,000 to 16,000 bees, which had filled themselves with 450 to 600 grammes of honey before swarming.

When to Winter Bees Out of Doors, or in Cellars.—In an article in *L'Apiculture Nouvelle* the conditions under which bees should be wintered are discussed. It is stated that in a cold region, where the intense cold lasts for a considerable time, colonies must be extremely strong, other-

wise they should be taken indoors. As a general rule, it may be stated that it is safer to winter in cellars when the temperature remains at 10.4 deg. Fahr. for several weeks in succession. On the other hand, in a climate where the temperature reaches 68 deg. every two or three weeks, so that bees are able to fly, and does not go down as low as 5 deg., but keeps about freezing-point, wintering out of doors will give the best results, although bees remaining on their summer stands consume more food, but they will have more brood and more young bees in the spring and early summer than those wintered in cellars.

NORTHAMPTONSHIRE B.K.A.

ANNUAL MEETING.

The twenty-seventh annual meeting of this association was held on February 26 in All Saints' Schools, Northampton, Mr. J. S. Partridge presiding over a fair attendance of members. The secretary stated he had received apologies from several unable to attend, the absence of some, he regretted to say, being caused by illness.

The report, read by the secretary, stated that the committee had pleasure in noting the year closed with a cash balance of £13 15s. 11d. in favour of the association. The season of 1909 was one of the worst experienced by bee-keepers, the white clover bloom producing very little honey, owing to the wet and cold weather. The annual show was held, by kind permission of the Museum Committee, in the Museum Buildings, Abington Park, on August 4 and 5. Mr. W. Herrod, F.E.S., judged the exhibits, which were not so many as the previous year, and awarded the silver medal of the British Bee-keepers' Association to Mr. A. Hiscock, and in the open class for 1-lb. jar of honey Mr. C. E. Billson was awarded the first prize of £1. The committee had much pleasure in stating that members had not only secured some of the top prizes for honey at the large shows in London, but one member (Mr. Hiscock) had taken three or four first prizes for beeswax in open competition.

The report as read and the balance-sheet in the hands of members were, on the motion of Mr. Billson, seconded by Mr. Palmer, duly passed.

Thanks were passed to the retiring president (Mr. Leonard Brassey, M.P.), and to the committee and officials, after which the election of officers for the ensuing year took place as follows:—President, the committee to appoint; vice-presidents, the Right Hon. Earl Spencer, K.G., the Lady Knightley, Mr. C. W. Phipps, Mr. H. Manfield, J.P., M.P., Mr. James Manfield, J.P., and Mr. Leonard Brassey, M.P.; hon. secretary, Mr. R. Hefford; hon. steward, Mr. R. Brawn (Kingsthorpe); hon. treasurer, Mr. G. E. Atkins; hon. district secretaries and committee, Mr. J. R. Truss (Ufford), Mr. W. Manning (Northampton), Mr. F. Old (Piddington), Mr. C. J. Burnett (Northampton), Mr. F. Beale (Kettering), Mr. A. Hiscock (Loddington), Mr. C. E. Billson (Cranford), Mr. W. H. Chambers (Northampton), Mr. H. Collins (Berry Wood), Mr. G. Page (Holcot), Mr. J. Bubb (Bugbrooke), Mr. W. Osborn (Northampton), Mr. O. Orland (Flore), and Mr. L. Andrews (Longthorpe, Peterborough).

Mr. Collins proposed, and Mr. Talbutt seconded, that the annual show be held in Abington Park if arrangements could be made with the Municipal Flower Show committee, which was agreed to.

A long discussion then ensued on several subjects connected with the welfare of the association.—(*Communicated.*)

HERTFORD, WARE, AND DISTRICT B.K.A.

ANNUAL MEETING.

The annual meeting of the above association was held in the Mission Hall, Ware, on February 16, when Mr. A. Willmott presided over a fairly good attendance.

The secretary presented the fourth annual report, which stated that the membership was increasing, eighteen having joined during the year. Several of the larger subscribers, however, having resigned, the balance-sheet showed a deficiency due to the treasurer (Mr. R. T. Andrews) of £1 18s. A further advance had been made with regard to prizes at shows, some very good honey having been staged at Bengeo and Ware.

The association's expert (Mr. W. Gee) presented his report, which stated that he had examined 106 frame-hives and nine skeps, and found four hives affected with foul brood. With regard to the honey season, a few had obtained excellent results, although the weather was far from being all that could be desired. One member averaged 60 lb. for eight hives, one alone yielding 105 sections, while one hive belonging to another member produced 96 lb. of extracted honey.

The president (Mr. Abel H. Smith), the vice-presidents, the treasurer, and the hon. secretary were re-elected, and the committee were also reappointed, with the substitution of Mr. F. S. Guy in place of Mr. Stamford. A hearty vote of thanks was accorded to Mr. Hanbury for allowing the use of a room in the Mission Hall for meetings. The officers were thanked for their services, and a vote of thanks to Mr. Willmott for presiding concluded the meeting.—F. P. Howard, Hon. Sec.

Obituary.

MR. RICHARD GODSON.

It is with great regret that we have to record the death of Mr. Richard Godson, which took place at Tothill, Alford, on Sunday, February 27, at the age of fifty-eight years. Mr. Godson was recovering from an attack of influenza, and when, on the Monday preceding his death, he drove to his out-apiary to see whether the severe storm of the preceding day had done any damage to his hives, he caught a chill, with the result that he had an attack of double pleurisy and pericarditis. Everything possible was done for him, but, in spite of unremitting attention, he passed peacefully away.

THE LATE MR. RICHARD GODSON.

The funeral took place at Tothill Church on Wednesday, March 2, the service being taken by the Rev. H. Jackson, Rector of South Reston. Six local bee-keepers were the bearers, and the county association was represented by the treasurer, Mr. G. Booth Walker, Mr. David Seamer, adviser to the Grimsby district, and the secretary, Mr. J. H. Hadfield. There were many beautiful wreaths, including one from the county association.

Mr. Godson's loss will be keenly felt by the members of the Lincolnshire Bee-keepers' Association, by whom he was held in the highest esteem. He occupied the position of hon. secretary from the year of its reorganisation in 1889 until August, 1908. Acting under medical advice, he was then reluctantly compelled to give up the work.

It was undoubtedly due to his untiring zeal that the association reached such an excellent position numerically and financially. On his retirement from the secretaryship the members presented him with a handsome gold curb chain and cheque as a slight token of their appreciation of his services. Mr. Godson was a practical bee-keeper, and one of those unselfish men so rarely met with nowadays, his services being always cheerfully given, and he left nothing undone that would tend to the prosperity of his association. On all occasions when we came in contact with him we found him most courteous and considerate, and we are sure all our readers will join us in sympathy with the relatives in their bereavement.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of February, 1910, was £3,425.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7759.] The month of March arrived in quite lamb-like fashion, a whole week of fine weather coming as a welcome change. The bright sunshine has opened the crocus flowers, and our bees have fairly revelled in the blossoms, collecting the first pollen of the year. On the third fine day I put out the usual skep containing wood-wool sprinkled with a mixture of one part wheat to two parts pea-flour, and in less time than I can recount the fact numbers of bees had discovered it, and began to fill their pollen-baskets, and every day since there has been quite a swarm busy in the skeps.

Those bee-keepers who have only a few hives and a goodly number of flower-gardens near the apiary need not trouble to supply artificial pollen, but when a large number of stocks are located together, many years' experience confirms my opinion that artificial pollen, given judiciously, induces early brood-rearing, and builds up stocks in early spring with abundance of young bees. If any doubts exist as to the likelihood of stores running short, a favourable opportunity, when the sun is shining and bees are on the wing, should be taken to ascertain how the food is lasting out. Do this with as little disturbance of the brood-nest as possible: a comb of honey, if on hand, can be placed next the one containing young brood or eggs, or, failing honey in brood-combs, give a good-sized cake of candy or a supply of thick syrup, taking care that in every case the brood-nest is left well wrapped up: this is very essential at this time of the year. Now is the time to sow annuals for the bees; later on in the month a sowing of wallflower-seed and *Melilotus leucanthus* (to bloom next season) should be made, also the "Chapman" honey-plant." It is also advisable to place orders for hives and appliances as early as possible before the rush begins.

Re overstocking, I endorse what Mr. Kidd says (page 78) with regard to this important question. A large apiary requires a supply of artificial pollen in the early spring, and also a supply of water near the hives, and it means a great saving of bee-life on cold, windy days if this is provided near, and the bees have not to go any distance to obtain these necessaries of brood-rearing: but as the season opens and we get an abundance of natural forage, I do not think a good honey district would be overstocked by, say, 100 to 300 hives. I have in past years kept 100 hives in my home apiary, and another 100 at Stanmore, two miles away, and I do not think it I had double the number that my district would be overstocked. I had several neighbours who kept bees a few years ago, but recently the cottagers have relinquished bee-keeping, and there are only two cottage bee-keepers in Beedon now, while I am the only one remaining in World's End, though a young farmer started last season with a few hives not far from my home apiary. I do not, however, think any district in this country would sustain as a profitable commercial speculation so large a number as Mr. Alexander's 750 large colonies. The expense of out-apiaries depends very much on the district and its conveniences for transit. In a district which is not hilly a cycle will connect up the out-apiaries at a cost of ½d. per mile, or a small motor, costing about double that amount, might be used. The pony and trap is not to be despised as the conveyance for transporting most of the requirements of the out-apiaries, except the big *haul* of honey at the end of the season, and this can be moved home at a cheap rate by the local carrier on his off-days. This is the way I have managed for over twenty years.—W. WOODLEY, Beedon, Newbury.

FLESH AS FOOD FOR BEES.

[7760.] From the report furnished last November by the County Council expert, Mr. Cardell Williams, it appears that in out-of-the-way parts of Cornwall there are bee-keepers who still feed, as they believe, their bees with animal food, such as birds and fish. This curious custom cannot much longer survive, and a future generation of bee-keepers will perhaps refuse to believe that it ever existed. It seems well, then, to make a definite record of it before the day of enlightenment shall have arrived, and to add such explanation as the history of bee-keeping may afford. In dealing with the past there often arises a difficulty in deciding how far any particular method of art or industry advocated by writers of the day was really practised. With this premise

we may go back as far as the first century of the Christian era to consult Columella, the most approved of ancient classic authors on agriculture and the fullest on bee-keeping. I quote from the instructions on wintering bees in the fourteenth chapter of his ninth book. English translation. London. 1745: "Some kill fowls, and, after they have taken out their entrails, shut them up in the hives, and they afford a gentle heat to the bees, which lurk in their feathers in the winter-time; as also, if their provisions are spent, they feed commodiously upon them when they are hungry, and leave nothing but the bones."

From the Sunny South to Sweden is a far cry—far enough, one would imagine, to be beyond the range of Roman influence. Olaus Magnus (1490-1558), Bishop of Upsala, in his "History of the Northern Nations," written in Latin and published at Rome, with many quaint woodcuts, in 1555, says that in urgent cases when honey was wanting bees were fed on pounded beans or peas, or cakes made of poppy-seed, or wheat-flour moistened with honey-water, or even on the flesh of recently-killed fowls, broken up into very small pieces.

I have found no mention of feeding bees with flesh as an existing practice in any Continental bee-treatise, ancient or modern, not even in those of Italy or Spain, where Roman influence chiefly prevailed. Johann A. Overbeck, who in his "Glossarium Melitturgicum," Bremen, 1765, gives a critical summary of Columella's chapters on bees, remarks: "Feeding bees with dead birds as described by Columella is so extraordinary as to make great demands on our powers of belief. . . . After much thought, I have come to this conclusion: The feathers kept the bees nice and warm in winter, and it may be that when the hive was opened the flesh had been consumed. But we need not conclude that the bees had eaten it. Beetles and other flesh-consuming insects may have crept into the hive and done what was put down to the bees."

The London paper the *Athenæum*, of July 15, 1837, in a review of "Historisch-Statistiches Gemälde des Russichen Reichs," after having shown how extensively bee-keeping was then practised in Poland and in the southern parts of the Oural situated in Europe, proceeds: "Rytchkof, being desirous of ascertaining by his own experience if bees were really consumers of fleshy substance, caused a dead fowl, plucked, to be placed within a hive. For the space of three or four days it remained there untouched by the bees; but no sooner did it begin to decay than they eagerly devoured it, leaving nothing but the bones."

Only one English bee-treatise known to me mentions the custom in question—an anonymous work published in 1840: "But what is strange, the bees will use not only the rich juices, but also even the very solid parts of young and tender roast meat, particularly that of the chicken, whose flesh they seem to relish well."

In the *Journal of Horticulture* for September 6, 1864, a correspondent, signing "Ruby," writes that he knew an old gardener who fed his bees in winter on small birds, roasted well, and basted with honey or strong syrup of sugar and treacle, and that he himself had seen the skeletons taken from the hive. The editor remarks that the same occurrence had been attested by too many witnesses to be entirely discredited. On October 18 "Ruby" writes again that a lady in the neighbourhood had been so successful with her bees that he had called upon her, and was told by her that she fed her bees in winter almost entirely on meat, any scraps from the table. She put no sugar, and her father and grandfather had always done the same. The lady then lifted up the hive, and on the floor was a black crowd of bees, in the midst of which was the indistinct outline of the drumstick of a turkey. The lady laughed at the idea that they might be carrying the meat outside.

After other correspondents had written to say that with them the experiment had come to nothing, Mr. Woodbury, the celebrated Exeter bee-keeper, informed the editor that it was the habit in parts of Devon, after the departure of a newly-married couple, to present the bees with portions of all the eatables and drinkables of the feast.

In these days, when everybody knows everything, I need hardly mention that in the event of such an unwelcome addition to the furniture of their hive the poor bees would remove all they could as soon as practicable. The bones they could hardly be expected to carry outside. Roasting the birds, and especially soaking the bodies in syrup, would sweeten their labour and perhaps speed it on. It is most unlikely that one particle of the flesh even then would be consumed. Mr. Cardell Williams informs me that he found the flesh lying in front of and about the hive in little bee-loads. The dead birds and fish, generally salted and not over-fresh, had been placed upon the floorboard, and the skep dumped down upon it regardless of the combs. The skeletons of birds and fish, quite clean, remained to tell the tale.

I have shown from what ancient times this curious custom takes its date. And the original explanation of it I take to be as ancient—a feeling of grateful reverence. "Some say," sang Virgil,

"unto bees a share is given of the Divine intelligence." Aristotle, from whom he borrowed most of his bee-lore, held the same opinion. How, then, should man, their keeper, deny to his charge a share in the food that he himself consumed?

It would be interesting to learn if the custom we have discussed still exists anywhere out of England. Perhaps some of our cousins across the seas, or some Continental reader of the JOURNAL, will be kind enough to let us know.—H. J. O. WALKER (Lieut.-Col.), Leeford, Budleigh Salterton.

CLIPPED QUEENS.

[7761.] "D. M. M." adds to his long list of interesting articles one on clipped queens on page 84 of the B.B.J., and as there are one or two points about which he is not quite explicit, from what he says we may take it that this is because he has had no personal experience of this method of preventing absconding swarms, as in his apiary he has not this danger.

In my personal experience, a swarm issues from a colony with a clipped queen in much the same way as from a colony with a normal queen. In the vast majority of cases they settle in apparently a normal cluster. The bees remain quiet for from fifteen minutes to an hour, and then suddenly take to wing and return home. "D. M. M.'s" friend may possibly have a similar experience to one that befell a brother of mine.

He kept some colonies in a flat and open fen district, and, as they were far removed from any habitation, he tried the experiment of clipping his queens to prevent absconding swarms. One day soon afterwards he went out to see how his colonies fared, and just as he arrived at the apiary a swarm issued. "Ah," said he, "that one is safe, as her majesty is safely clipped. I have only got to pick up the queen as she comes out, and the bees will soon finish their mad dance and go in again." But instead of seeing his swarm return to the hive, to his great dismay he saw it disappearing from sight. He secured the queen, and then sat down to meditate on the apparent divergence between practice and theory. He came to the conclusion that this clipping game might be all very well for Americans, but it was not for him. Hearing a roar, he looked across the field, and there, to his surprise, was the lost swarm hurrying pell-mell home.

In my experience it is quite common for a clipped queen not to leave the hive the first day the swarm comes off (perhaps she recognises her disability?), but I have always found her leave the hive on the next day that weather permitted. If the swarm is not seen as it issues, she is generally found with a small handful of bees five to ten yards straight in front of the hive resolutely marching away from what was so recently her home. It is probably rare for her ever to endeavour to return to the hive once having left the alighting-board.

The following is a simple method of clipping which I have not seen in print. Having located the queen on a comb, either rest it against a hive or ask a friend to hold it. Armed with a small pair of surgical forceps or tweezers in the left hand and a small pair of sharp scissors in the right, catch the ends of the wings with the forceps, and cut off as much of the wings as desired while the queen, in fear of being taken off the comb, is clinging to it with *all* her feet. There is not the danger of squeezing her in the excitement of the moment, nor of imparting to her a foreign smell that the method of handling her entails.

To turn to another subject. Mr. J. M. Ellis, in "Ross-shire Notes," page 87, states that the drawback of shallow chambers as brood-chambers "is that singly they cramp the queen, while used double they encourage brood-nest storage." I think, as I have indicated before, that he will find that he can have a large brood-nest and yet very little brood-nest storage when using two shallow chambers if at the time of supering he reverses the position of the two brood-chambers. Any cramping of the brood-nest during the clover harvest encourages swarming, to the disadvantage of the clover return, and lessens the number of bees that will be available for the later heather harvest.—MEDICUS, Newcastle-on-Tyne.

FOUL-BROOD LEGISLATION.

[7762.] Why are bee-keepers, especially beginners, so nervous of a Foul Brood Act? Are they afraid of a Government expert telling them their bees have foul brood if, upon inspection of the hive, he should find it to exist? Far better to know it, and take steps to prevent it spreading, than to let it contaminate a whole district.

Anthrax is being stamped out by the working of an Act of Parliament, swine fever is being held in check by the same means, and I contend that pig-keeping would be, not difficult, but impossible were it not for the Swine Fever Act. Bees, like other stock, require looking after; if stocks are neglected and allowed to get dirty and in a low state of vitality, they will be the first to be attacked should disease come near them. Those who keep bees and look after them properly need not fear Acts of Parliament; it is the

careless ones who have to be looked after, and the sooner a Foul Brood Act becomes a reality the better it will be for bee-keeping both as an industry and a hobby. —G. E. Horwood, Campden.

[7763.] Is it that the advent of new men to the Legislative Chamber inspires confidence that new measures may be taken to deal with the pest hanging over bee-keepers like a nightmare? I cannot say. I notice that little has been reported in our journal during the last twelve months of active measures against disease. If this controversy is to be re-opened; if it is necessary to agitate until we have such powers given us that we may defend ourselves; if, again, we must have a fierce fight for success, I for one am willing and glad to break a lance in the good cause.

I cannot understand the position taken up by the "non-legislators." Can anyone pretend that the prevalence of diseases of all kinds has not been checked by wise regulative measures? Smallpox, cholera, and scarlet fever, which in the fifties scourged the human race, if not stamped out, have been so far controlled that now we no longer go mad with terror of an epidemic. We know that, sufficient power being placed in the hands of properly-qualified specialists, they can isolate the contagion. In the case of animals they can go even further. Rinderpest in the sixties, and more recently hydrophobia, have been absolutely stamped out, because men were wise enough to recognise that, for the benefit of the community in general, it was necessary for a few to suffer inconvenience. No law was ever made, exists now, or ever will be, that does not cause hardship to some persons. Let not your range of vision be narrowed down to your own apiary, be it of five or fifty hives. Consider the whole of the industry, and even from a low standard morally, in the proportion that you enable others to keep bees successfully, with the least possible risk of their being swept away by contagion, you will advance your own interest.

Another argument used against compulsory inspection is that appointments may be made of inspectors who, armed with penal powers, and possibly insufficiently acquainted with their work, may unnecessarily order the destruction of stocks attacked, or by inquisitorial visits make bee-keeping unbearable. But this is very weak. Occasional instances may occur of excess of zeal. Have we not now in every county experts of every grade, men of approved wisdom, patience, and knowledge, who are not likely to lose their heads and who may be trusted?

I should like to take some of the "non-legislators" with me on my tour as an expert, and I think I should soon alter their opinions. I have in my mind three cases where stocks reeking with foul brood poisoned the whole neighbourhood, and probably there were thirty bee-keepers in the vicinity. The first case, though I had outside evidence proving to the hilt that the disease was there, refused inspection or to take preventive measures, even though I employed the most persuasive eloquence I am capable of. In the other two cases I offered to supply absolutely free of expense new stocks and hives to replace those I had condemned. My gift was refused. What more could I do but go away sorrowing and wish for the day to come when the firm hand might be shown in the velvet glove. I could give many more instances.

Foul brood, like poverty, we have always with us. Two thousand years ago Aristotle wrote: "There is another sickness, similar to a sleepiness of the bees and a foulness of the hive." Very probably this is a reference to the disease. An inspector's duty would not always be to destroy. In the earlier stages it may be arrested and prevented. Expressed in a very few words, the whole case seems to be this: Science is prepared to step in and use all its weapons to combat the enemy, asking only that facilities shall be given to search for and find that enemy in any corner it may lurk. On the other side there are those who say: "No. You may do all this, but we will not move a hand to help you. It interferes with our petty arrangements. We will sleep on. Do not disturb our slumbers."—J. Smallwood, Hendon.

DRONE-BREEDING QUEEN.

[7764.] My attention was drawn to the above subject in "Cappings of Comb" (page 90) in your issue of last week.

Last year in July I had a case similar to Mr. Martin's, only the hive was being used for queen-rearing. I had taken out a few queens as they hatched, leaving the last one to head the stock, but as she showed no sign of starting ovipositing I decided she had been lost in mating, as I could not find her in the hive. I then introduced a ripe queen-cell, which hatched out all right. During this time I had given the stock a frame or two of hatching-brood and a frame with a half-sheet of foundation in centre of hive. The weather about this time was very unsettled, with very little honey coming in, so I did not open the hive for a few weeks. I was therefore much surprised and disappointed when on opening the hive I found the half-sheet of foundation fully extended, but with drone-cells in the lower half, and nearly all the cells packed with plump drone-larvæ. I now fully

made up my mind that the queen was a drone-breeder, so I closed the hive, intending to give another young queen as soon as one hatched out, which I expected to occur in about a week's time. When I went to the hive with the young queen I was still more surprised, on taking out a frame, to find a good quantity of eggs in worker-cells, and some already hatched, the drone-brood already referred to being mostly capped over. Under the altered circumstances I did not introduce the young queen, but put on a small super, as heather was coming into bloom. At the end of the season I got a little surplus, and the drone-brood which was shifted to outside brood-nest was hatched and the cells filled with honey. As the queen seemed to be doing fairly well, the hive was closed down later in the season, and has not since been opened.

The bees seem to be of the native variety, but may be slightly crossed. I will keep a look-out as the season approaches, and if it be of any interest will report further progress.—ALEC LOW, Aberdeen.

DEEP AND SHALLOW FRAMES.

[7765.] In B.B.J., on page 88 (7754), Mr. Seadon says that "the ideal frame has not yet arrived." To my mind, it would be an improvement to leave shoulders on the top-bars, which could be cut out, when making, the same size and shape as metal ends, as this would be cheaper than using the latter.

Mr. Soal's "taper frame" may be good in one way, but to adopt his plan would cause some expense, as the frames would have to be ordered specially, and the inside boxes would also require reconstruction to fit the taper frames. With enough room on each side of the standard frame, I have never found any trouble in taking them out or placing them back. In either case, I hope we shall all have heavier frames to lift out this season than most of us had last. Wishing every bee-keeper success for 1910.—B. B., Bristol.

TRADE CATALOGUES RECEIVED.

ABBOTT BROTHERS (*Southall, near London*), inventors and manufacturers of prize hives and appliances, send us a revised and comprehensive list which has been brought up to date. All that a bee-keeper may want in the way of appliances will be found in it, and the firm also supply stocks, swarms, and queens—British, foreign, and hybrids—from their own apiaries. Sixty-page catalogue free on application.

E. L. AND H. C. JONES (*The Bee-keepers' Supply Stores, Monk's Acre Apiary, Andover, Hants*).—This is a well-got-up and nicely-illustrated price-list of bee-keepers' requisites. In addition to the regular line of appliances, the firm supply "Simmins" frame feeders and neat, attractive honey-tins printed in four colours, which are lighter and cheaper than bottles, and are just the thing for attracting customers.

Echoes from the Hives.

As a general rule the wintering of bees has been favourable. It was necessary to feed the colonies a good deal in the autumn, owing to the poor honey-harvest last year; but the winter has been mild, and, as the bees have been able to have frequent cleansing-flights, up to the present they have been quite free from dysentery. I found during July that two colonies were suffering from "mummified brood," in the same way as those I described to you about two years ago (B.B.J., November 7, 1907, page 442). I am watching them, and will let you know after brood-rearing has commenced if they have recovered during the winter.—PIERRE ODIER, Celigny, Switzerland.

Yesterday, for the first time this year, I noticed bees working on snowdrops, and pollen being carried into the hives.—BORDER, Berwickshire.

We have been having cold weather here. Bees have been unable to fly since early in November, and it will be some time yet before they can be put out of the cellar. Dealers are sending out lists of goods, and appliances will cost a little more than last year. There seems to be a general hopefulness for a good season, and many indications are favourable.—E. EWELL, Waseca, Minn., U.S.A.

Queries and Replies.

[3998.] *Bees Fighting after Removal.*—As an interested reader of the B.B.J. I am seeking your explanation and advice with regard to the conduct of a stock of "British Golden" bees after removal from one position to another. The stock in question were originally hybrids, but in August last I re-queened them with one of Sladen's Golden Prolific fertile queens, and by the middle of October—the last time I examined them—there were eight frames well covered with bees, principally goldens. About five weeks ago I removed the stock to a new location about a quarter of a mile away, which I did during a frosty spell of weather, on a wheelbarrow, taking the greatest care to avoid jarring as much as possible. Up to the time of removal the hive had a south-west aspect, had

plenty of stores, and was in every respect normal. Since the stock has occupied its present position, "facing east," on days when the weather is favourable for flight the former peaceful condition is changed to one of excitement and bitter hostility, blacks *versus* goldens, the ground in front of the hive being strewn with dead and dying bees, mostly blacks, which number, I should say, almost ten to one. I estimate the loss of between 400 and 500 bees from this hive since removal. Being only a novice in the craft, it has naturally caused me some anxiety as to the probable reason for this unusual state of things. Wishing continued success to your valuable JOURNAL, through which we in search of advice receive it at such small cost.—NOVICE, Mitcham.

REPLY.—The black bees are robbers which have attacked the stock. Close the entrance of the hive to about a bee-space, and the mischief will probably cease.

Notices to Correspondents.

W. J. B. (Croesyceiliog).—*Transferring Bees to Clean Hives.*—You have simply to place the two clean hives on the stands of two stocks, and after subduing the bees with a little smoke lift the frames out of the old hives, and place them in clean ones in the same order as they were in the hives from which you took them. You can then clean and disinfect the old hives, and use them for transferring two more. Bees should be transferred to clean hives at least every spring. We prefer to do it also in autumn, as it gives a good opportunity for examining the condition of the colony before packing it up for wintering.

BEE-KEEPER (Montgomeryshire). — *Comb-foundation.*—1. If the frames are well wired you can use the foundation, but it is not so strong when placed the wrong way. 2. The "A B C" book covers the whole ground of bee-keeping, and is an encyclopædia on the subject. This, as well as every other book sold at this office, has been reviewed, and there would be no practical use in repeating such reviews.

MRS. B. (Beckenham).—*Dwindling Colony.*—From your description it is evident that the colony has dwindled owing to the old bees dying off and there being no young ones to keep up the heat of the cluster. The only thing you can do in future is to encourage brood-rearing by stimulative feeding at the close of the honey harvest, so as to have the colonies strong and hives crowded with bees.

G. (Royston).—*Dying Bees.*—The only two bees which were not dried up and were fit for diagnosis were suffering from a bad attack of dysentery.

J. N. (Cumberland).—*Solution of Formaldehyde.*—1. The solution has evidently evaporated and precipitated the white sediment, most likely from the bottle not having been properly corked. Your best plan is to get a fresh supply, as you cannot make a solution of the proper strength by guesswork. 2. Yes; if of full strength, double the quantity is very likely to injure the bees, as 1½ oz. is the most that can be put in a hive safely.

REV. (Coverack). — *Protection against Woodlice.*—1. If you use the iron shoe for hive-legs, shown on page 168 of "Guide Book," and keep the receptacle filled with paraffin or other oil, it will effectually prevent the woodlice from entering hives. 2. No. 1, very good heather honey; No. 2, good heather-mixture; both granulated.

W. J. W. (Plymouth).—*Autumn Syrup.*—1. To every 5 pints of autumn syrup add 2 pints of warm water. This will make the syrup of proper consisteney for spring feeding. 2. You should have no difficulty in starting and keeping a smoker alight. We use either rags torn into strips and rolled up, which when once alight will keep so for several hours, or corrugated paper such as is used for packing. This does not burn long, but one charge is usually enough for manipulating a hive. In a properly-constructed smoker, if it is kept in an upright position, it will keep alight until all the fuel has burned out. When laid horizontally it very soon goes out.

W. E. Z. (London).—*Selecting Hives.*—1. There is not sufficient advantage in having chambers underneath brood-chamber to make it worth the extra trouble in working. 2. They prevent swarming if frames are constantly removed. 3. Yes. 4. The queen will lay in them if she has no room above, unless the frames are removed as they are drawn out. 5. We would recommend you to get the ordinary "W. B. C." hive as the simplest and most suited for general work.

M. G. (Hythe).—*Colony Dead.*—The colony was evidently too weak to winter, and the small cluster was unable to reach the stores in severe weather. If the full combs are in good condition they can be given to the other colonies.

X. Y. Z. (Bungay).—*Uniting Queenless Colonies—Using Weed-killer.*—1. Either plan you propose would answer if done with as little disturbance as possible, using smoke sparingly, otherwise at this time of the year robbing is easily started. Another way is quietly to remove the cover of the queenless colony,

place a sheet of brown paper on it, piercing one or two small holes near the centre; then go to one of your light colonies with a queen, and carry it without the bottom board, and set it on the top of the queenless colony. The bees should not be disturbed for four days, when the lower hive can be removed. 2. At certain times it is quite safe to use weed-killer, but gardeners who use it do not always study the convenience of the bee-keeper in the matter. There are certain times, especially in the spring, when bees seek eagerly for water, and are out whenever the sun shines for the purpose of getting it. At such times, unless the bees are confined to their hives, they run the risk of being destroyed. We saw such a case last season where the path had been treated with weed-killer during a bright day. All along this path there were thousands of dead bees, clearly showing that they had died in their endeavour to get the moisture from the sun-warmed gravel. At other times bees do not take any notice of it. In recommending, it is always better to be on the safe side, so that is why we advise bees to be confined when weed-killer is used, or to use it on a warm evening after the bees have ceased flying, so that it may be dry before the next morning.

J. H. (Cambridge).—*Use of Formaldehyde.*—This should not be used in bee-food, it being merely a disinfectant. Naphthol beta is the safest and most efficacious medicant for spring food.

J. M. (West Norwood).—*Super-clearers.*—The "Porter" bee-escape is one of the greatest boons to bee-keepers ever introduced, and as a super-clearer it lessens labour and risk when removing surplus honey. Most decidedly it is better to use one than adopting the method you suggest.

G. Mittis (Cambridge).—*Dead Queen.*—The queen is a fertilised one, but has evidently ceased to lay early, resulting in a diminished number of bees. The stock has dwindled during the winter, and the other colonies, discovering the inability of the bees to protect themselves, have completed the destruction by robbing out the hive.

Suspected Combs.

F. L. (Crosby) and J. Spurge (Stratford).—There is no foul brood in comb. The bees have evidently died from starvation, in spite of the fact that the combs contained food. The explanation of this is that the cluster diminished rapidly in early winter, owing to the preponderance of old bees in the stock when first going into winter quarters. The bees were thus disinclined to move on to other combs containing stores when the food on the one on which they were clustered was exhausted.

Anxious (Hants).—There is no foul brood in comb, which contains hard, mouldy pollen only. If many of the combs are pollen-clogged in a similar way, it will be best to remove them.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Individualism and Morality of Bees.—P. Haeberlin writes on this subject in *Basler Nachrichten*. Referring to Maeterlinck, he says that in a hive the individual bee does not count; her existence is only a conditional one, and she is simply a winged organ of the species. All her life is a complete sacrifice for the innumerable company of which she forms only a part. It is curious to notice that this has not always been so. Even now we find among melliferous hymenoptera all the stages of progressive civilisation up to our domestic bee. At the foot of the ladder we find bees working alone and carrying on a miserable existence, often not even living to see their progeny (*Prosopis*, *Colletes*, &c.); sometimes they live amidst the small family circle which they produce (*Bombus*). Then we find them forming temporary companies (*Panurgus*, *Dasypoda*, *Hallictus*, &c.), in the end arriving by degrees to the almost perfect but pitiless society of our hives, where the individual is entirely absorbed by the republic, and where in turn the republic is regularly sacrificed for the abstract city of the future. This is the ideal which the writer points to with regard to man. Does not humanity, he says, owe its progress in all domains to division of labour, the absorption of the individual by the society? He thinks that without doubt we approach this ideal of the hive, and can show that, like it, an important part of the community does not labour for the purpose of realising this object.

Waste of Wax.—M. Fritz has an article in *Le Rucher Belge* on the saving of wax, in which he mentions the great waste that usually takes place with regard to it. He says it may be questioned whether there really is a serious waste. He does not hesitate to answer the question in the affirmative, and to prove it he alludes to what takes place in most apiaries. Bees make their first flights in February or March, and the bee-keeper takes advantage of these to clean the floorboards of the hives. This is all right, but unfortunately, in ninety-nine cases out of a hundred, all that is scraped off the boards is allowed to fall on the ground. Among this rubbish there is a considerable quantity of wax. He mentions an instance of a bee-keeper who took the trouble to melt the refuse from a dozen hives, and obtained 300 grammes (10½ oz.) of pure beeswax. This is not much, but is more than the weight of five sheets of our comb-foundation, and is certainly worth saving. Later comes the complete inspection of the colonies. Drone-comb is found, also portions of comb that are mouldy from damp, while others may be soiled by dysentery. All this has to be got rid of, and is quickly done, the pieces of comb cut out, thrown into an empty hive in some corner of the apiary, and forgotten. Later they are found infested with wax-moth, nothing but the webs remain, and the bee-keeper has lost the wax, and throws the lot away. Besides this, in a frame-hive bees construct brace-combs, put them in all sorts of places, and as these interfere with free manipulation of the frames they have to be removed; and how frequently they are recklessly thrown away. The wax is, however, almost pure, and is in this way wasted. M. Fritz recommends that all wax be collected and melted, and if this is done the bee-keeper will be astonished at the amount he will be able to save.

NOTTS B.K.A.

ANNUAL MEETING.

A satisfactory and encouraging record of work was submitted at the annual general meeting of the Notts Bee-keepers' Association, which was held at the People's Hall, Nottingham, on Saturday, March 5. Mr. J. F. Blackshaw (principal of the Agricultural College, Kingston) presided, and he was supported by Captain J. A. Morrison, M.P., Mr. W. S. Ellis, Mr. A. G. Pugh, and Mr. G. Hayes (secretary).

The annual report stated that the association started the year with a total membership of 233. Fifty new members were enrolled, but thirty-three had resigned or left from other causes. The financial statement was satisfactory, as the association began the year with a balance in hand of £14 14s. 5d., and finished up with one of £16 5s. 6d. The past season had not been one of the best for bee-keeping, and those who started bee-keeping this year would, it was feared, fail to make their venture profitable. Bee-keeping must not be judged by one, two, or three years' experience, as generally one good year would make up for a number of bad seasons. Nine experts visited amongst them 214 apiaries, containing 809 stocks of bees, 715 of which were examined, and advice and assistance generally given. About 4 per cent. of the stocks were found diseased; some were destroyed, or, if only slightly affected, remedial measures were taken to put them in a healthy state.

In the discussion on the report Mr. Harrison commented on the great number of bee-keepers in the county who were not members of the association. One of the failings of the association, he thought, was that it did not advertise itself sufficiently.

Mr. A. G. Pugh, on the other hand, spoke favourably of the progress which the association was making, the membership being steadily augmented.

The committee elected were as follows:—Messrs. W. Adams, J. Bickley, H. Dickman, Dr. Elliot, T. N. Harrison, A. G. Pugh, G. E. Puttergill, G. Smithurst, G. E. Skelhorn, F. G. Vessey, G. White, and J. C. Wadsworth.

Mr. G. Hayes was re-elected secretary and treasurer, Mr. W. Darrington auditor, and Messrs. Hayes and Pugh delegates to the B.B.K.A. The Duchess of Portland was re-elected president for the ensuing year.

A hearty vote of thanks was accorded to Mr. Blackshaw for having presided so ably over the meeting, and in reply he said he was very glad to be able to be present and to learn what he had of the working of the association. He was much struck by the amount of work that had been done at such a small cost, and he was sure the association deserved the help of those who could give it, and should be joined by every bee-keeper in the county. Bee-keeping was a small industry, but a very important one, as in addition to the profit arising from the production of honey, the fruit-grower and farmer were benefited by the fertilisation of the flowers, which greatly increased their crop. He also believed that bee-keeping was one of the side lines that would assist in making small holdings pay.

About ninety members and friends were at the afternoon meeting, and partook of tea at 4.30. The evening meeting commenced at 6 p.m. with the distribution of medals, certificates, &c., followed by a most instructive address on "The Production of Comb-honey," by Mr. W. Herrod, secretary of the B.B.K.A.

The next item was to consider the proposed scheme for the reorganisation of the B.B.K.A. The matter was well discussed in all its bearings, and eventually it was resolved "That the members of the Notts Bee-keepers' Association, having considered and discussed the suggested scheme for reorganisation of the B.B.K.A., desire to express their emphatic disapproval of same, believing the present association possesses all the necessary machinery, rules, and regulations for carrying out any of the suggestions which have recently appeared in the B.B.J. for its improvement." This was carried with only one dissentient. The usual prize drawing brought the meeting to a close.—Geo. Hayes, Secretary.

LECTURES ON BEE-KEEPING NEAR LONDON.

Readers residing in Kent and Middlesex will be interested to hear that Mr. W. Herrod will give two lantern lectures on "Practical Bee-keeping"—one on March 23, under the auspices of the Beckenham, Bromley, and District B.K.A., at the Lea Wilson Room, High Street, Beckenham; and the other on March 30 at Holy Trinity Parish Room, East End Road, East Finchley. The latter is organised by the Middlesex B.K.A. Admission is free to both lectures, and all interested in bee-keeping are cordially invited to attend.

AMONG THE BEES.

INCREASING THE OUTPUT.

BY D. M. MACDONALD, BANFF.

Over 100 years ago a Scotch author wrote a book entitled "A New Plan for Increasing the Number of Bee-hives in Scotland, England, and Ireland." The other day a writer put in a plea for increasing our output of honey. It is a fact that we have far too few hives all over the country. Travel where we may, by rail, road, or river, how few apiaries of any size catch the eye. Lately I covered over 200 miles of a famous bee-county by train, road, and bicycle without seeing a single bee-hive! It may have been partly my own fault, because I know they were on my route somewhere; but the fact remains that the only "bee-hive" I saw was an ale-house bearing that name in the side-street of a city! Now, there were miles and miles of hedgerows, every here and there were nooks of blossom, and on every hand were flowery pastures and verdant woodlands. It struck me that tons of nectar were everywhere wasting away, because no bees were there to garner it up and change it into luscious honey. Everywhere I turned there were small orchards, fair stretches of fruit-bloom, and smiling cottage gardens, gay with all sorts and conditions of flowers. What a mine of wealth if only it were turned into honey! On the far horizon stretched, not very distant, a low chain of hills, clad in purple bloom, yielding an almost illimitable stretch of heather, where bees could banquet unchecked as long as weather favoured their keen ardour. Mr. Coates's estimate of a 400 tons increase seems to me a modest one as my mind multiplies that corner of a county by at least a thousand others.

A Model Syllabus.—The Secretary of the Croydon and District Bee-keepers' Association sent me a neat, handy syllabus of their programme for 1910. On the inside of the cover is pasted a printed copy of the rules, numbering twelve. Then there is a neat inset containing the list of office-bearers, the advantages of membership, and the programme of business for the year, which shows a monthly meeting of some kind right through the twelve. Wisely, I think, a new man takes the chair at each successive meeting, and a nice variety is

noticeable in the bill of fare. Of course, there is an annual meeting, but there are also an annual show, an annual outing, and an annual visit to a model apiary—in this case Mrs. Seadon's, at Bromley. Papers are read at other meetings, and at one there is a question-box, where written queries are invited from all members. But, in my opinion, perhaps the most commendable feature is the fact that at certain meetings a bee-book is selected for special consideration, when extracts are read by some member, and this is followed by a general discussion. Thus one evening we have "Wax Craft" forming the "feast of reason," another meeting deals with Cheshire, while, to show how cosmopolitan the members are, Langstroth "On the Honey-bee" or Roots' "A B C of Bee-culture" forms the mental pabulum at other gatherings. It is pleasing to add that not only do the gentle sex figure in the list of members, but they take their fair share in working out the programme. I am highly delighted with the syllabus as a whole.

A Model Apiary.—The secretary of another association has forwarded me some particulars of a model apiary they have founded in connection with their society. I think highly of this idea, and trust others may follow such a laudable example. It has been established on a plot of vacant ground some miles from the city, but it is easily accessible, as the tram-cars pass in close proximity to the site. The situation is described as an ideal one, being in the centre of a good fruit-producing district, having a pleasant southern exposure, and thoroughly protected from the northern blasts. Within easy reach of the bees are extensive reaches of white clover, while surrounding them are stretches of fruit, flower, and vegetable gardens, forming excellent foraging ground. It is the intention of the committee in charge to give a number of open demonstrations on the best methods of manipulating stocks, with an occasional lecture, thus making the apiary to a certain extent a school of modern bee-keeping, where beginners will be afforded opportunities of acquiring a competent knowledge of the best methods of managing stocks in health and curing them when infected with disease. It will be open to the public on Saturday afternoons with the intention of fostering and encouraging a taste for bee-keeping. This, too, is an excellent and commendable feature in bee-keepers' associations, which I should like to learn is imitated by others.

Associated Effort.—While on the subject of associations, I may notice several points where united effort may, and does, work much good to the craft. Every association might do its utmost endeavour, individually and collectively, to secure some planting for bees. Many municipalities plant large numbers of shade-trees in their streets and suburbs. Limes, planes, and other polliniferous and nectar-producing trees are as umbrageous as any that could be chosen, and, moreover, they are handsome and elegant in growth and appearance. Members of associations might preserve and distribute seeds of various well-known honey-plants amongst their poorer neighbours. Borage, "'Chapman' honey-plant," and many others could be passed round at the season of planting, and remnants of seed-packets could be advantageously disposed of through the district secretary or at first hand. Instead of the petty jealousy too frequently made manifest during the disposal of the honey-crop, aid should be given to neighbours to help them to sell at a paying price. Each association should be an informal bureau whereby buyers and sellers could be brought into contact. Members with libraries might more liberally circulate the knowledge contained in bee-books not easily within the reach of the rank-and-file. Associations' libraries, I fear, are too frequently locked away in some forgotten cupboard—food for worms. This was assuredly not the purpose of the donors, and it certainly is not the proper use to make of good books. They should be *ever-circulators.*

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PROSPECTS IN CANADA.

[7766.] I have had frequent inquiries from the old country *re* prospects out here since my letter appeared in the B.B.J., and if interested readers will send you their queries I will with pleasure endeavour to give them the information they seek. I would, however, impress upon all this fact: if a man is doing fairly well in the old country, let him stop at home, and disregard the fairy tales you read of in the pamphlets, or take them with a big pinch of salt. Take, for instance, the picture of the villa farmstead; if you bring it down to the resemblance of a stable you will be nearer the truth. In my run from Quebec to Victoria, across the prairie, I never saw a house that I could ask a decent woman to reside in; it was only when I reached a town that the houses deserved the name. My next advice is: keep out of British Columbia—a country

as large as England, Switzerland, and Denmark put together, with an area 700 by 400 miles, and a population of less than 400,000. In this vast territory you cannot get land (I mean for homesteads, 160 acres for the settler), as it is in the hands of the capitalists, who wait for the greenhorn to come along to fleece him. The country seems to be over-run with these "real estate men," as they are called out here, who come to Canada, not to develop it, but for a gamble, and to grow suddenly rich at somebody else's expense. Readers may wish me to answer another question: What am I doing here? My answer is this: I was no asset at my home in England. I scorned to let the womankind keep me, so I plunged into Canada, with the grim determination to succeed or die in the attempt. I have been harvester, labourer, joiner, cook, watchman, caretaker, gardener, farmer, and watchmaker, all in nine months, which shows the utter uncertainty of labour. I have done well, and passed a good many on the road, but it is not everyone who can turn his hand to as many different occupations as I can. I sent 180dols. home at Christmas, earned since August, and, though I am out of work just now, I may be in to-morrow. So much for myself. With regard to the bee-industry in Canada, it is really in embryo, like the country's fruit, but growing successfully. Ontario is the best province; plenty of moisture and heat, and everything that makes fruit a success. Two days before I received the letter you forwarded from a correspondent in Scotland I was talking with an old Ontario bee-man and fruit-grower, and he said the results there far surpassed anything this way for both honey and fruit. And again let me caution intending emigrants: Do not come out to run the bee-business—use it as a side line; and try to get a situation to come out to, or you may depend on having a hard struggle for existence.—E. A., Victoria, B.C.

DISTURBING BEES DURING WINTER.

WIRING FRAMES.

[7767.] I was glad to see you advise an inquirer (page 71) not to disturb his bees before the end of March. Those advertising bees do not realise the danger of queens being "balled" if bees are moved during November to March inclusive, besides the risk they run of chilled brood.

Wiring Frames.—I have tried several ways of wiring frames, but find that two horizontal wires give the best results. In addition, I always cut a small wedge off the lower angles of the sheets of foundation, because if this is not done these angles buckle. I use wire at least four times stronger than appliance dealers keep in stock, and if put fairly in the middle of the sheet it does not make any difference to the brood. It should be fixed quite taut, so that the wires will sound like dulcimer wires when struck. It will sag slightly, but not sufficiently to elongate the cells appreciably. In my opinion, the usual fine wire used is almost useless for the purpose, and if a full comb is held flat the wires will break with the weight. Some bee-keepers fix the wire to small screw-eyes in the inside of frames, with wires perpendicular, horizontal, and diagonal too. This is strong, but think of the time it takes; and then it is impossible properly to tighten the wires, whereas with two strong horizontal wires it is easy to wire thirty frames in an hour, and correspondingly less time is spent in fixing sheets and embedding wires.

I believe I mentioned in a former letter that I use a bottom bar not over $\frac{3}{8}$ in. wide, because I found that the usual $\frac{7}{8}$-in. bar will occasionally sag, and then it makes a hiding-place for wax-moth grubs—I mean in the reduced space under the bottom bar.

On March 4 bees were gathering pollen from chickweed and groundsel, and, of course, crocuses and snowdrops. Hazel catkins about here are scarce, and only just blooming.—A. Harris, Wavendon, Bucks.

BEES AND FLOWERS IN GIBRALTAR.

[7768.] I am at present taking a nine weeks' trip in the South of Spain, and I thought some notes of what I have seen as regards bee-keeping might possibly be of interest to the readers of the B.B.J. My reason for sending you these notes when only a third of the way through the trip, instead of waiting till the end, is that a good many of my impressions of flowers, &c., which are interesting now, would be out of date half-way through April. We arrived here early on Saturday, March 5, and soon went on shore, and, after inspecting the town, we at last found ourselves in the Alameida Gardens. I was much struck by seeing flowers that blossom in June and August in England blooming here in March. The following list comprises most of the flowers we saw: Roses, antholyza, pansy, arum lilies, iris, asphodel (two kinds), lavender, broad bean, bramble, freesia, borage, red rybiscus, cineraria, convolvulus, candytuft, sunflower, *Scilla mediterranea*, mignonette, romulea, broom, bougainvillea, yellow oxalis, nasturtium, and geranium. Bees were working in great numbers on the asphodel. They seemed to me strongly to resemble our ordinary

(*Correspondence continued on page* 108.)

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

In our friend Mr. P. Ralph, whose neatly-arranged apiary we illustrate this week, we have another enthusiast, whose interest and enjoyment in his bees increase with his knowledge of bee-keeping. In the notes which accompanied the photograph Mr. Ralph gives a short but lucid account of his six years' bee-keeping. He says:—

"I commenced bee-keeping in the spring of 1904 with one stock in a frame-hive, having no knowledge of the craft whatever. I was advised to purchase the 'British Bee-keeper's Guide Book,' and with it and the B.B.J. and *Record* I may say I have never looked back. The same year my one stock gave me 60 lb. of surplus honey—the largest amount I have had from one hive. I have gradually increased my apiary each year, and now possess twelve stocks in good condition, ready for the season now commencing. Two years ago I kept eighteen stocks, but found these too many to attend to along with my business as a grocer. I may say I have been the means of eight others starting bee-keeping on modern lines, and several more intend to start in the spring. I also converted two old skeppists to the use of the frame-hive. I have had three cases of foul brood to contend with, one my own, the others being in neighbouring apiaries, and successfully cured each one by taking drastic measures, burning all combs, wrappings, and inside fittings of hives, starving the bees for forty-eight hours, and putting them back into clean hives with full sheets of foundation and feeding with medicated syrup. I have had a few successes on the show-bench at our local and district shows both in Yorkshire and Lancashire, winning several first, second, and third prizes for both honey and beeswax. I am local hon. secretary for the Lancashire B.K.A. in this district, and have a great number of requests for assistance each year, which I am always pleased to give, and impart to others what I have learnt. Last season was an absolute failure here, as elsewhere, for honey. Our main crop is from the heather, which yielded nothing, owing to adverse weather. I have no difficulty in disposing of all my honey, and buy a great quantity each year from my neighbours, for which I can get 1s. and 1s. 1d. per lb. retail.

APIARY OF MR. P. RALPH, SETTLE, YORKS.

"All the hives shown in illustration are my own make, on the 'W. B. C.' principle. I work at these during the winter months. I have never had such an interesting hobby as bee-keeping, and look forward to each season with increased enjoyment. If these notes are not already too long, I should like, before closing, to wish our Editor and all brother-bee-keepers a record honey-yield in 1910."

("*Bees in Gibraltar*," *continued from page* 106.)

English blacks, though they were, if anything, rather blacker. I did not see any hives, and a good many people of whom I inquired did not know of any bees being kept. As the population of Gibraltar is composed chiefly of soldiers, who live in barracks, there is not very much room for bee-keeping. In the afternoon we went up over the galleries, and saw a good many of the flowers already mentioned, but no bees. I believe that there are many other varieties of flowers there later in the year, and as on the "permit" one is asked not to pick them, they bloom luxuriantly.

On Sunday afternoon we went to Europa Point, and found gazania, red tobacco, mesembryanthemum, honesty, white clematis, snapdragon (two kinds), and cytisus, all blooming in profusion. The bees were busily working on the asphodel and yellow oxalis; both of these plants are very common here, and seem to be their favourites. On Monday we went to Algeciras, on the other side of the bay. After walking along the railway for a mile or so, we turned inland. By the side of the lines are planted yellow oxalis, borage, and a purple plant, which I think is a kind of valerian; but I am not sure, so I enclose a flower, which you may know. We passed the railway about noon, and the bees were going in thousands to the yellow oxalis. They visited seven or eight flowers, and then flew out of sight, but seemed to me to keep to one class of flower. About two o'clock they worked solely on the valerian, and when we returned about three o'clock the yellow oxalis was closing up, and they were chiefly on the borage. I saw in the distance some very peculiar-shaped hives, which looked like three washing-tubs inverted, placed on top of each other. Unfortunately, I could not stop to photograph them, or find the owner, but I hope to be able to get some photographs of Spanish hives before I leave. Further inland we saw some white narcissus, violets, daisies, marigolds, a sort of buttercup, ornithogalum, and two large orange-orchards, which were a glorious sight. There were a good many humble-bees on the flowers, and I saw one mason-bee. There were plenty of butterflies—Red Admiral, Tortoiseshell, Clouded Yellow, Brimstone, and Swallow-tail; some big grasshoppers from 3 in. to 4 in. long; some lizards, wasps (not queens), and swallows. These do not seem to have much to do with bee-keeping, except the last two; but I mention them to show the contrast between the climate here and the kind of weather I expect you are having in England. It is ideal bee-weather here, but the sun is rather too hot. We leave Gibraltar at noon on Tuesday, the 8th, for Malaga, where we spend one day; after which we go on to Cordova, where I hope to obtain a Spanish copy of Mr. Cowan's "Guide Book"; and then on to Linares, and home by Cadiz and Lisbon.

It is five days' post from England to here, and since I left on February 26 I have only received the March *Record*, but I expect my B.B.J.s will turn up some time. I asked the steward of this ship, who has been here a good many times, if he had tasted Gibraltar honey. Considering the quantity of flowers here, there ought to be native honey of some kind. He had not come across any, and probably, if there was any honey used, it was imported, as the Spaniards are very slack about getting it (considering what the weather is like, I am not surprised). However, I will try to find out more about it. I hope to get some samples of honey from the different places I go to, and, if successful, shall send them to you, and ask you if you would be kind enough to analyse them, as it would be interesting to compare them with English honey; but as I have not yet got the samples I had better not say anything more. With best wishes to all bee-keepers for a prosperous season and large harvest.—W. G. COATES, s.s. *Iberia*.

[We shall be pleased to have the photos and any interesting news you may send from the various places you touch at. Weather here is not so bad at present. The flower sent is a species of valerian.—ED.]

EPIDEMIC AMONG BEES.

[7769.] I read with great interest Mr. Simpson's letter (7755, page 88, B.B.J., March 3), in which he refers to the loss of stocks in Buckinghamshire, especially as we seem to be in a similar predicament around here. I had ten stocks passed by an expert in October as free from disease; they were all dead in January, with a few cells in each hive affected with foul brood, no doubt contracted late in the autumn from robbing. As I was unable to satisfy myself as to the cause of death, I have made several inquiries, and find a great number of people between Watford and Barnet in a similar plight, their losses amounting to well over 100 stocks. This is a neighbourhood hitherto free from disease, and therefore this outbreak is all the more surprising, as nothing of the kind has been experienced before. It will be interesting to hear how others are faring and how far the trouble has gone.—N. H. A., Aldenham, Herts.

I.O.W. BEE-DISEASE.

[7770.] Since my last communication a few more stocks have gone wrong here. One from which a few odd bees had fallen during the previous week had a general turn-out on Saturday, but, instead of flying, about 90 per cent. fell to the ground, and the large majority stayed there. The ground was covered with crawling bees for a distance of ten yards on each side of the hive. The few left inside were apparently dead this morning (Tuesday); but a warm brick or two brought them round, only to crawl out and drop on the ground, where they now are. In the next village—Chalfont St. Peters—I hear that the same symptoms appeared in seven or eight stocks on the same day. Saturday was the first real flying-day for over a fortnight.

We are calling this the I.O.W. disease, but is it? Certainly it is somewhat similar, but it differs from what I have read of it in that there are no really swollen or distended bees, or rather none are more so than is usual with healthy bees which have been confined to the hive for several weeks, or than are coming home heavily laden with honey.—A. SIMPSON, Chalfont St. Giles, March 7.

FOUL-BROOD LEGISLATION.

[7771.] May I be allowed to add another word of welcome to the renewed agitation for a Foul Brood Bill? It seems very unjust to the majority that our industry, small though it may be, should be so severely handicapped by, I think I may say, the selfishness of a few bee-keepers whose bees presumably are either kept far from others or are in a district free from disease. I think one or two experiences such as mine would help to convert them.

I was called in to see a neighbour's bees by his wife, who said she thought they were about to swarm. He was away from home. I found one stock, which was rotten with disease, nearly robbed out. My own apiary was within a few hundred yards, and in consequence I had a bad outbreak of foul brood, and had to totally destroy eight or nine stocks, besides having endless trouble in disinfecting hives, &c., due, I take it, to this man's negligence; and I could quote another similar instance.

I sincerely hope that this agitation will not be allowed to drop till the Bill becomes law.—H. B. BAYLEY, Sellindge.

CLIPPING THE QUEEN.

[7772.] While reading "D. M. M.'s" article on page 84 I was surprised that he did not mention artificial swarming as a preventive of loss of swarms, as, in my opinion, it is better than clipping queens or using swarm-catchers. Clipping the queen's wings I consider a cruel practice, and, like foul brood, should be done away with as quickly as possible.

F. Sitwell's letter (7750, page 85) strikes the right chord, and I agree with him that the Foul Brood Act should have been passed in 1904. Probably the reason why it did not commend itself to the extensive bee-keeper was because he looked at it from a business point of view; he would not sell so many stocks if small bee-keepers were successful. There is no doubt that large bee-keepers know how to cope with foul brood, but it is a selfish policy to think only of their own advantage and not consider the small man. We must all join issue and stick up for the Bill if bee-keeping is to be successful in the future.—A. E. BOULTON, Leicester.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A fide ad facto (page 66).—Which, being freely mistranslated, is "additional facts about the aphis." I am quite willing, however, to take the generative computation on trust. Figure, if you can, what it would mean to count 729,000! For these statistics read as though it were not a mere computation, but a record of fact. Even so, it is more impressive to say, as my books have it, that the progeny of a single female may in one year number 100,000,000,000,000,000! Single female indeed! The lady's text for the day should be "It is nought, it is nought"; but when she hath gone her way, straightway she boasteth. Think of poor Bonnet, who may have kept the traditional bee, totting up the licentious columns in his budding aphiary. It would indeed be a-phidgetting task! But what an increase, which, enemies apart, would soon bury the face of the earth, just as the sea would become solid with codfish. At a tithe of this rate swarms of bees might be had for the asking, and overstocking would become a real problem. But, of course, these figures simply show what might happen if all could "do their possible." I think if "D. M. M." will refer again he will find that the spring generations are viviparous from the first, and that there are no males produced until the autumn. This life-history is, by the way, one of the adduced proofs of the recently-attacked theory of parthenogenesis.

Honey-dew (page 67).—Now, I should have said that aphides were *principally* borers. I am familiar, of course, with their well-assumed attitude of innocence when accused, and that they were only

just sucking up a little waste sugar from the extra nectaries; but the evidence of the tree is against them.

Gelatinous (page 67).—I do not see why this term should suggest glucose. Nothing was further from my mind. It seemed to me to describe the condition of thoroughly ripe ungranulated heather honey. Not jelly, but jelly-like, and a thing of beauty. However, I am quite willing to accept "D. M. M.'s" term "consistency."

Foundation Buckling (page 68).—I think that a good deal of this is due to expansion. In fact, expansion may be primarily the cause of buckling, the untruth being only aggravated by the weight of bees. I have invariably purchased the most expensive foundation, but have found it to vary in this respect. The fact of expansion may be simply tested by putting a tightly-wired sheet to the fire for a few moments, when buckling will probably take place. I have had perfectly flat combs produced when one side has been drawn out first. This has occurred where foundation has been placed at the outside of the brood-nest. I venture to think that the number of bees protecting the far side of such sheets has been insufficient to heat them thoroughly.

Apis Dorsata Fund (page 74).—I do not know under what conditions this fund was started, but if it be intended to hunt this savage, then it would seem to me to be eminently practical that it should be diverted from such a wild-goose chase and applied to the needs of *Apis mellifica*. Some wise man said that "charity beginneth at home"; Faith and Hope are admirable ladies, but at times a trifle impractical, and the greatest of these three is Charity; yea, there is even a fourth whom it is well to know, and her name is Commonsense.

Overstocking (page 79).—I doubt if either of these instances—viz., the big "Alexander" apiary and the congregation at the moors—really applies to a clover district. It is not so much the surplus flow in a good season which is affected as the light flows or intermediate periods, which conduce to brood-rearing in a reasonably limited number of stocks. After all, a short experience shows the futility of overstocking.

Why? (page 81). — No, friend "D. M. M.," I have read your No. 1 reason for painting hives, and I am unconvinced. Not that I fully understand it, for I do not. I re-read it carefully, and viewed it from every position, even upside down, until I became doubtful whether I myself stood upon head or heels. Here it is! "The senior editor is a man of æsthetic taste, and adorns the front cover of each issue of the *A.B.J.*" But what if he is, or does? Certainly you say they look better painted, but whether this dictum is intended to apply to Mr. York or Dr. Miller I do not clearly perceive. I have examined their portraits, and think that you must have keen eyes to detect paint. But perhaps you have received a presentation copy of the *A.B.J.* with a coloured cover. Please explain, to prevent international complications.

Like Experts' Visits, Short and Far Between (page 81).—Mr. Dickinson's judgment reminds me of the navvy who was indignant at being charged half-a-crown for a painless extraction by a modern dentist. "Why," he said, "owd doctor, 'e lugged mah rahnd raam hawf an haar fur a shillin'"! Nothing like having plenty for your money. Many patients distrust the doctor who diagnoses at a glance, whatever his reputation. They like to be made to take half their clothes off, and describe a lifetime of small symptoms to explain fully a pain in the leg, "with calvings and groans that declare it."

Queries and Replies.

[3999.] *Re-queening Queenless Bees in Spring.*—In B.B.J. of June 24, 1909, page 246, it is recommended to lift the brood-chamber of a colony *with a queen*, carry it away, and place it above a queenless colony, with a sheet of brown paper, punched with holes, between the two body-boxes, when it is asserted the bees will peaceably unite, and the lower (or queenless brood-chamber) will be found empty in four days, and can be removed. If this is feasible it would save endless trouble. But why not reverse the process? Lift the colony *with a queen* on to a table, carry the queenless colony in its stock-box, and place it on the queened colony's stand, then replace the original queened colony above the queenless one, with brown paper between. This would avoid shifting the queened hive, and save any loss of flying bees from it, while any of the queenless stragglers, finding their old home removed, would probably seek shelter in neighbouring hives. 1. Is the plan recommended in B.B.J. safe and practicable? 2. Would not the queened colony's flying bees be lost? 3. Would the plan recommended by me be an improvement? 4. How many holes, and what size, should be punched in brown paper? 5. Would the queened stock on top have sufficient ventilation, and be able to accomplish egress and ingress? 6. Would there be any chance of queen being attacked or "balled"? 7. What month should the operation be performed?—CHAS. DUNLOP, Arran.

REPLY.—1. Yes, it has been found both safe and practicable if the instructions are carefully followed. 2. If done at night, as recommended, there would be no flying bees to get lost. 3. Your plan would entail more disturbance of the bees, would take longer, and probably end in them fighting. The secret of success depends on disturbing the bees as little as possible, and completing the operation before they have time to realise that they have been moved. In the first place, the cover is removed from the queenless colony *quietly*, and the brown paper laid on; this can be done with just a puff or two of smoke. The colony with the queen can be removed and placed direct on the top without any smoking, and so expeditiously that the bees would hardly notice the disturbance. Your plan would involve not only moving the colony with the queen twice during the operation, but also moving the queenless colony. 4. The instructions state one or two small holes; the size is immaterial, so long as they are not too large. About an eighth of an inch will do. 5. Yes, the bees very soon enlarge the holes and make the communication easy. 6. Yes, if clumsily done, or there is robbing going on, but if carried out according to instructions the union generally succeeds. 7. In the spring; this would mean March or April in the South, and April or May in the North.

TRADE CATALOGUE RECEIVED.

LAMB BROTHERS (*Moreton-in-Marsh, Glos.*) send a neat fourteen-page illustrated list describing the leading requisites for a bee-keeper in the way of bee-hives and appliances. Catalogue free on application.

Notices to Correspondents.

B. W. D. (Sheffield).—*Joining Association.*—1. The Derbyshire B.K.A. would be the most convenient for you to join. 2. If you wrote to the secretary, Mr. R. H. Coltman, 49, Station Street, Burton-on-Trent, he would inform you of the nearest expert. 3. In transferring bees from skep in the spring it generally takes them the whole season to establish themselves in their new quarters, and unless they are exceptionally strong they are not likely to swarm.

GERRARD'S CROSS.—*Dysenteric Bees.*—Bees sent are badly affected with dysentery, which has caused their death.

AMATEUR (Paignton).—*Race of Bees.*—1. Dried and damaged specimens of common bees. 2. Make a start with a swarm of native bees, which are best for a novice to begin with.

G. H. G. (Disley).—*Sugar-boiling.*—1. A sugar-boiling thermometer costs 7s. 6d., and can be obtained from manufacturers of confectioners' machinery or instrument makers. Messrs. E. Skuse, Ltd., Ashmore Works, Harrow Road, London, W., can supply what you want. 2. When syrup begins to boil, two or three minutes' further boiling is sufficient. 3. You can give bees syrup made by pouring water on the sugar, but it is not the same thing as syrup made according to the recipe in "Guide Book," which undergoes a transformation in the process of making, and is the nearest approach to the composition of honey. Boiling and the addition of the acid transform the crystalline cane-sugar into the non-crystalline sugar of honey, otherwise with plain sugar and water the transformation has to be made by the bee at great cost. When storing rapidly the conversion is not perfect, the consequence being that a great deal of the sugar crystallises in the cells, and is thus wasted.

S. M. (Surbiton).—*Nucleus-hives.*—You can make two or three nuclei in an ordinary ten-frame hive provided you give each compartment an entrance in a different direction. If you refer to page 132 of "Guide Book" you will see that it is recommended to make up a nucleus with two or three combs, one of which should contain honey and the other brood.

N. H. (Branscombe).—*Persistent Robbing.*—1. This is very difficult to stop, and the best way of doing so is to close the hives, care being taken to provide ventilation. If you are not able to place a folding tent, as shown on page 163 of "Guide Book," over the hives, close the entrances with perforated zinc, and remove the hives to a cellar for a few days, placing empty hives on the stands. When the robbers find there is nothing in them they soon give up coming. As a last resort, some bee-keepers put traps on these empty hives, so that the bees get in, and cannot get out until released towards evening, when they are glad to get home again after a day's imprisonment. 2. The comb sent contains foul brood.

F. P. H. (Ware).—*Printed Labels.*—Any printer would print you labels such as are recommended on page 90 of "Guide Book," if you showed him what you required. Bee-keepers usually get these done by some local printer.

L. G. W. (Partridge Green).—*Bees Building in Candy-case.*—The piece of comb built in the candy-case shows that your

colony is very strong, and should do well.

H. F. B. (Holbeach).—*Spreading Brood.*—1. No, we do not recommend spreading the brood in spring, as at that time brood should be as compact as possible so that it can be well protected from cold by the bees. 2. Where stocks have plenty of stores feeding is not necessary, and breeding can be stimulated by uncapping or bruising some of the sealed cells every few days as recommended on page 109 of "Guide Book." 3. Yes, the "Wilkes" excluder has the advantage in that it allows a larger number of bees to pass through it at one time, and obstructs them less, as the burnished wires present a smooth rounded surface to the bees, instead of a thin sharp edge, as in the zinc. 4. We have had no experience with celluloid excluders. 5. The usual shallow frames, 5½ in. deep, using eight such frames with wide spacing. 6. Supers are 6 in. deep, 15 in. wide, and 14½ in. front to back, inside measurement. Such a super will hold eight frames with wide ends or ten frames with ordinary ends.

F. Y. W. (Worcester).—*Storing Extracted Honey and Stimulative Feeding.*—1. It depends very much on your market, although with extracted honey it makes little difference, as the prices do not fluctuate as they do with section-honey. Extracted honey in airtight tins keeps almost indefinitely, so that there is no reason for rushing it on the market. 2. Butter-tubs are not suitable for ripening or storing honey, and they can never be thoroughly cleaned. Tin is the best material for such receptacles. One ripening-can should be sufficient for a moderate-sized apiary, especially if care is taken to extract at the proper time. 3. With outside feeding the strongest colonies, which least require it, get the largest quantity of food. At the same time you are feeding your neighbours' bees, who would probably commence robbing as soon as the supply of food failed, unless nectar was being gathered in plenty.

R. McK. (Griffithstown).—*Coal-oil.*—This is a general name for mineral oils such as paraffin and kerosene.

Emigrant (Lancs).—*Bee-keeping in New Zealand.*—Information re bee-keeping in New Zealand appeared in B.B.J., April 1 (page 130), December 2 (page 474), and 16 (page 491), 1909. The "Langstroth" hive is principally used there, American methods being advocated by the Government experts.

N. R. (Grantham).—*Dead Bees.*—There appears to be no disease. The bees sent are robbers, which can be seen from their black, shiny appearance.

J. Brown (Great Grimsby).—*Bee-keepers' Association.*—The secretary of the North Norfolk B.K.A. (the only one in the county) is Mr. C. J. Cooke, Edgefield, Melton Constable.

S. A. Peart (Carlisle).—*Death of Stock in Winter.*—The bees have died from starvation and cold, there being no disease in the comb. We should not advise using the combs for other stocks unless they are clean and wholesome, free from dead bees and granulated stores. It is a better plan to burn all the dead bees, combs, and débris, and disinfect the hive, even if disease has not been present.

J. C. Shepperd (Norwood).—*Assistance in Starting Bee-keeping.*—Write to the hon. sec. of the county B.K.A., Mr. F. B. White, Marden House, Redhill, Surrey, telling him of your difficulty. If he cannot help you, write us again, and we will give you some names and addresses of bee-keepers in the district.

Two Bees (Rotherham).—*Bees Dead from Cold.*—The bees have been chilled, as there is no disease in comb. The queen is a young one, and has evidently been laying, as the comb contained eggs. She appears quite normal.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, March 17, at 11, Chandos Street, Cavendish Square, when Mr. T. W. Cowan presided. There were also present Miss Gayton, Miss K. Hall, Colonel H. J. O. Walker, Messrs. R. T. Andrews, T. Bevan, C. L. M. Eales, E. Garcke, O. R. Frankenstein, A. Richards, G. H. Skevington, and W. Herrod (secretary). County representatives: W. E. Hamlin (Surrey), T. E. Hancox (Oxford), and Captain Sitwell (Northumberland). Letters expressing regret at inability to attend were received from Rev. A. D. Downes Shaw, Rev. H. N. Ellison, Dr. T. S. Elliott, Messrs. J. Grimwood, G. Hayes, J. B. Lamb, A. G. Pugh, E. R. Stoneham, and E. D. Till.

The minutes of the Council meeting held February 17, 1910, were read and confirmed.

The following new members were elected: Hon. Frances Wolseley, Glynde, Sussex; Mrs. Gordon Greatrix, Anderson Manor, near Blandford; Miss M. Dillon, Alresford, Hants; Miss E. Gardiner, N.D.D., Peterchurch, Hereford; Miss H. H. Turner, The Pool House, Astley, Stourport; Miss A. E. Whitehead, Bryn Afon Pool, Leeds; Lieut.-General F. S. Iredell, Furze Court, Brighton; Commander A. Lingham, R.N., Shipley, Horsham; Mr. R. Askew, Odell, Beds; Mr. J. Blundell-Walsh, Thornton, Poulton-le-Fylde; Mr. A. A. Coleman, Sherington, Newport Pagnell, Bucks; Mr. H. F. Hogley, Holmfirth, near Huddersfield; Mr. G. W. Kennedy, Odell, Beds; Mr. D. W. Wells, Foots Cray, Kent; and Mr. R. H. Wilshaw, Bulkington Avenue, Worthing.

The report of the Finance Committee was received and adopted, together with the balance-sheet for 1909, to be audited and printed in the annual report, the balance in bank being £143 8s. 5d. Cheques were passed for salaries, printing, medals, and insurance amounting to £61 1s. 10d. The annual report was read and adopted, and arrangements were made for the annual meeting.

The first-class examination was fixed for May 20 and 21, in various districts as required.

The secretary of the newly-formed Monmouthshire B.K.A. applied for affiliation, and the same was granted.

A report was made by the secretary with regard to insurance of the members of the Surrey B.K.A., and he was instructed to keep the counterfoil policy-book at the disposal of the secretary of that association, and to send the policies direct to the members, this being sufficient receipt for the premiums paid, and that no separate receipts be sent to the secretary of the Surrey B.K.A.

The special meeting of delegates to consider and discuss the reorganisation scheme was fixed for May 19. Letters were read from the Cambridge, North Norfolk, and Lanes B.K.A.s to the effect that they could not agree to adopt the scheme for reorganising the B.B.K.A.

The Chairman said he had received from the Cumberland B.K.A. 700 voting-cards sent by bee-keepers in Cumberland and neighbouring counties on the subject of legislation respecting foul brood, all with the exception of one being in favour of compulsory powers for dealing with the disease. In view of the renewed interest evinced in the matter, he had been to the Board of Agriculture and seen the Secretary, in whose hands the matter was now placed, and had also that day, with Captain Sitwell, had an interview with Lord Carrington, which was very satisfactory; but, of course, the Board required evidence that such legislation was really needed before they could move in the matter. The Chairman thought that a strong representative committee should be appointed as soon as possible to take the matter in hand, and to obtain the real feeling of bee-keepers throughout the country with respect to legislation, before they approached the Government again. Captain Sitwell also reported on his interviews with Lord Carrington and Sir Edward Grey, whom he had interested in the subject, and approved of a strong committee being formed. The matter was ordered to be placed on the agenda for consideration as soon as possible at a future meeting.

Mr. Reid stated that he had obtained permission to stage an exhibit showing the scientific side of bee-keeping at the coming Japan-British Exhibition at the White City, and it was resolved to try to get bee-keepers to co-operate, so that an exhibit worthy of the Association might be staged. Mr. Reid was cordially thanked for his efforts.

The next meeting of the Council will take place on April 14.

Nominations of members for election on the Council for the year 1910 must be made not later than March 31. Each candidate must be nominated by two members of the Association. Forms for such nominations may be obtained upon application to the secretary, W. Herrod, 8, Henrietta Street, London, W.C.

The annual general meeting of the members of the Association will be held on Thursday, April 14, at 11, Chandos Street, Cavendish Square, London, W. Notices of motions for this meeting must

be sent to the secretary not later than March 31, 1910.

Members' subscriptions became due on January 1, and should be paid as early as possible.

LANCASHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of the above association took place at the Preston Scientific Society's rooms, Preston, on Saturday, March 5, when Dr. Anderton, of Ormskirk (chairman of the executive committee), presided over a good attendance of members from almost every part of the county.

The minutes of the last general meeting having been read, the annual report was taken as read, as it was in the hands of all the members. The hon. treasurer read the balance-sheet, which showed a credit balance of over £11.

The chairman, in moving the adoption of the report and balance-sheet, congratulated the association on its splendid financial position, also on the fact that the expert had reported a decrease in the number of cases of foul brood in the county. The honey department at Lancaster Show in August last, of which the association had complete charge, had also been a success, in spite of the bad season, and he desired to thank the local hon. secretary at Lancaster (Mr. W. Lloyd) for his indefatigable efforts on behalf of that department. The report and balance-sheet were passed.

E. B. Dawson, Esq., J.P., of Lancaster, was re-elected president; and the vice-presidents include Lord Ashton and Mr. A. B. S. Welch. Mr. F. H. Taylor was re-elected treasurer and librarian; Mr. Jas. N. Bold, secretary; Mr. W. Wood, Manchester, auditor; Dr. Anderton, chairman; Messrs. Fenney, Lloyd, Rose, Rymer, Tyrer, Walmsley, Fielding, Martin, Patten, Wildman, and Lunham, committee.

In connection with the honey department of the Lancaster Show, the hon. secretary read a letter he had received from Mrs. Wilson, of Utah, U.S.A. (a daughter of Mr. W. Lloyd), enclosing a cheque for £2 as a contribution to the expenses of the department next August, and expressing a hope that the members present would see their way to supplement the offering. A collection was then made in the room, which resulted in a sum of 21s. being added.

Foul Brood.—It was resolved that the association try in every possible way to secure the passing of a measure in the present Session of Parliament giving compulsory powers of dealing with this pest, the members present being urged to see and speak with their Parliamentary representatives on the subject.

The reorganisation scheme of the B.B.K.A. was then discussed, and it was resolved that the hon. secretary inform the secretary of the B.B.K.A. that the association cannot see its way to adopt the scheme. The opinion was also held that the Council should hold their meetings at different places in the country instead of always in London.

The meeting closed with a hearty vote of thanks to the chairman.

Tea was then partaken of in the room, and during the interval the judging of the exhibits in the honey competition took place, Messrs. Rymer and Fielding making the awards.

At the evening meeting, when Dr. Anderton again presided, Mr. Taylor exhibited some fine lantern slides made from snapshots he had taken at Lancaster Show last August, and they were very much enjoyed. This entertainment was followed by a lantern lecture entitled "A Tour through the Lakes, Passes, and Glaciers of Switzerland," delivered by W. Marsden, Esq., of Southport. A vote of thanks to the lecturer and the chairman brought another most successful annual gathering to a close.—JAS. N. BOLD, Hon. Sec.

REVIEW.

Fruit. By W. Iggulden, F.R.H.S. (London: Agricultural and Horticultural Association. Price 1d.)—In this little handbook the author, a well-known practical authority, has specially aimed at explaining in simple terms all that is most important to be known in regard to fruit culture for small gardens. The booklet is No. 23 of the One & All Garden Books, edited by Edward Owen Greening, and published at the popular price of 1d. each. It is fully illustrated.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION.

[7773.] Each week adds to the number of letters which have appeared in the columns of the JOURNAL in support of the agitation for a foul-brood law. It is plainly evident that since the last attempt in 1904-5 a great number of bee-keepers who were then undecided or against legislation have now made up their minds to support those who have consistently ad-

vocated this means of fighting the common enemy of all bee-keepers. The agitation "will not be allowed to drop till the Bill becomes law," and I wish again earnestly to impress upon the large majority, who, I am sure, are with us in this matter, that the Bill will be passed just when they make up their minds to declare that they want it. The Board of Agriculture will not take the initiative, but is waiting for the verdict of the majority, and it is for those who are in earnest now to do their best to wake up the careless ones and to secure their votes in favour of legislation.

Very soon—perhaps before many more issues of the BEE JOURNAL are in our hands—an opportunity will be given for members of our craft to decide whether they are for or against legislation. What is the verdict to be? Surely all will put aside the thought of the trivial temporary inconvenience that may occur in the working of an Act, and unite to protect our industry by assisting to draft a wise measure for the suppression of our common enemy, the bane of British bee-keeping. Much will have to be done before we can achieve the desired end; but let us work, for upon everyone falls the responsibility of doing his utmost to advance the cause. Let all now make up their minds to back up the efforts of our leaders, and strain every nerve and sinew to show the desired majority in favour of the Bill. If all would "hustle," to use an Americanism, our difficulties would be overcome, and the result be like that in the tale of the frogs in the milk-tins. In case readers may not have heard this story, here it is: The incident occurred in the van of a New York to Chicago train, so the story goes. In that van were some milk-tins and a couple of frogs, one a New York frog and the other of Chicago. In their peregrinations each frog leaped by mistake into a can of milk, out of which they were unable to climb. "What shall I do?" gasped the New Yorker. "I fear I shall be drowned in this milk if I stay." "Hustle, you duffer," was the reply of his friend of Chicago. And when the train reached its destination a dead frog was found floating in one milk-tin, while in another was found another frog, sitting as pert as you please upon a nice pat of fresh butter, which he had "hustled" into existence *en route*.

That there are difficulties in the way of legislation is admitted, but they are surmountable. So again I say work and overcome them. Secretaries of associations, members of committees, experts, and local hon. secretaries can do much by advice and influence; but by far the best results can be secured by each association taking up the canvass of its own members, and through the experts or local hon. secretaries securing the vote of each individual member. Finally, let all be ready when the time comes for a supreme effort.—G. W. AVERY, Heads Nook, Carlisle.

APICULTURE AND THE JAPAN-BRITISH EXHIBITION.

[7774.] At the forthcoming Japan-British Exhibition at Shepherd's Bush there will probably be some exhibits bearing upon apiculture, in which our friends and allies, the Japanese, are so proficient. Lack of funds will not permit the B.B.K.A. to arrange a collective exhibit representative of British bee-keeping generally, and the representation of our industry will therefore necessarily depend upon the participation of private exhibitors or firms of appliance manufacturers. In order that the scientific aspects of British apiculture may not be unrepresented, I have arranged for an exhibit in the science section, and shall be much obliged if any British bee-keepers who may be disposed to contribute exhibits of a scientific nature will be good enough to communicate with me at the address below. Photographs or lantern-slides will be especially welcome, as more space can be found for these than for larger exhibits. —WALTER F. REID, Fieldside, Addlestone.

DR. MILLER REPLIES.

[7775.] Mr. Macdonald says (page 67), "I do not believe in everything Dr. Miller writes." Just think of the presumption of the man! And until reading that I had entertained a very good opinion of that Scotchman. And when he still insists that Dr. Miller "*is* an up-to-date and advanced bee-keeper," I may be excused for not having the fullest belief in everything Mr. Macdonald writes. But I must confess that Mr. Soal is not entirely convincing in the proofs he gives (page 26) as to my lack of up-to-dateness. One of his proofs is that I leave a comb of diseased brood in a hive for a time when treating black brood. However bad that may be, I surely thought it was up to date—the very latest wrinkle—for, so far as I know, it has not been practised before, and so cannot be called a discarded practice that is behind the times. Then, for his second proof (no paint): "I can imagine . . . grey-black mourning for their owner's negligence; how every board that *can* warp *will* warp; and how the end-grain of the wood will check and split." I confess to the "grey-black mourning," which may not be at all inappropriate, but am not responsible for the warping, checking, and splitting that are in Mr. Soal's imagination, and only there. The esteemed Editor of this

journal saw my hives some years ago, and I hardly think he has any vivid recollection of the picture that Mr. Soal "imagines."

Mr. Macdonald's parenthetical threat, "See next issue," fills me with suspense, and I am anxiously waiting to see whether it will be on my part a case of crawfish or of fight.

I am hopeful as to what clover will do this year. The winter could hardly have been more favourable. The snow was very deep, covering the ground for three months, during which time there was good sleighing. I took my last sleigh-ride March 5.—C. C. Miller, Marengo, U.S.A.

REORGANISATION OF THE B.B.K.A.

[7776.] I should like to endorse what Mr. Wakerell (March 3, page 89) says as to the necessity of waking up and putting life into the county and local associations before beginning to reorganise the central body, for a body which is weak in its units is bound to be weak in its whole. I see, amongst other things, that the Croydon association have a meeting every month for discussions, and thus interest is kept up. Now, as a new, and therefore keen, member I joined our county association in 1909, when I first started bee-keeping, and the local hon. secretary promised that I should receive two visits from the expert, and that there would be lectures and discussions in the winter; also I see that by the rules of the association the hon. secretary in each district shall call a general meeting in December, and such other meetings as he shall think fit. I wish to cast no reflection on the local hon. secretary, as he is a hard-working man and has his own business to attend to; but the winter is now at an end, and, so far as I know, there have been no general meeting, lectures, discussions, or anything except two expert's visits in the summer and autumn, and, so far as the association is concerned, I have learned nothing. How can any society flourish or its members be enthusiastic on such a diet as this? It naturally disheartens the new members; they go away discontented, and advise others not to join. Were it not for the valuable help afforded by an amateur friend, the B.B.J., and the "Guide Book," I might well be as ignorant of bee-keeping as when I started. It may be that I expect too much, but unless the associations are going to bring bee-keepers together, and generally make themselves a necessity instead of a luxury, it seems to me that not only the central body, but the individual associations are doomed to ignominious failure.

With regard to the scheme for the reorganisation of the B.B.K.A., I notice that nearly all your correspondents are able to criticise it and pull it to pieces, but none are able to put it together again in a more practical shape.

In conclusion, I would reiterate what I said at the beginning, that until the county and local associations are alive and active it is hopeless to try to reform the central body.—A. Raymond Penny.

TO BE OR NOT TO BEE?

[7777.] My stand in the matter of foul-brood legislation is backed up by my experience. For twenty years I travelled about one of the Northern counties among the bees, and if I had seen anything during that time which would convince me that a Foul Brood Act was necessary I should at once become a supporter, but I still require facts, and in the absence of them I maintain interference is unnecessary and needless. The old tale continues to be brought forward, viz., a neighbour's bees are diseased and a hot-bed of infection which cannot be got at. These terrible offenders I have of course met, but have always been able to get over the trouble; therefore, I repeat, strengthen the hands of the B.B.K.A., and I feel sure all that is required can be done. Who can say it has been tried and found wanting? It is well known the B.B.K.A. has never had sufficient funds to test its usefulness. As to possible sources of infection, I have seen a leaking barrel of foreign honey with bees and wasps plundering by the thousand. Again, imported foreign queens from countries where foul brood is known to exist are countenanced by supporters of legislation. Referring to Canada, much work has been done—no doubt many stocks destroyed and treated; yet disease cases are as numerous as ever, to judge by reports. I do not fear foul brood or possible penalties if a Bill is passed, but I do consider the case weak, and if I were chosen to pilot it through Parliament I should require a more united body to back it up. I am in touch with hundreds of bee-keepers who visit this island. I know that I am not alone in my views. I therefore speak on behalf of many silent bee-keepers. I am guilty of keeping a skep or two. Why not? But I note in one adopted Act it is penal to keep bees in anything else but bar-frame hives. Where is the liberty of the subject? Much of the written support given to this proposed legislation reads to me like election speeches. Let us have facts from the experienced. With every wish for success to the craft—Thos. J. Horsley, Merridale, Douglas, Isle of Man.

WHY NOT?

[7778.] I have been a great deal interested in the way that the National Poultry Association is taking up the matter of egg-production, &c., and is endeavouring to build up the industry by providing a market for the produce of present poultry-keepers and for those whom it is hoped the movement will create. I read in the papers that depôts are being started in many districts, where eggs will be graded and tested, and through which they will be placed upon the market.

My concern for the moment, however, is with honey, and as I read in the B.B.J. of March 10 (page 96) that "the value of honey imported into the United Kingdom during the month of February was £3,125," I thought of the honey which is retailed in this district at 6d. per lb., and of the impetus which would be given to bee-keeping generally if only the grading and marketing could be undertaken by qualified people, and so a better price obtained. A friend of mine is almost giving the whole thing up because of the difficulty of selling the honey when he has it. Last year he went to a high-class grocer in a county town with first-quality sections. He was offered 7s. per dozen provided he glazed them! I have been several times asked whether I would not like to pay 5s. per annum for the benefit of becoming a member of the local association, but, for my part, I should only have to be asked once, if that, to become a member of an association which would receive, grade, and market my honey at a better figure than the small producer can obtain at present. If a beginning could only be made, if a few depôts in certain large towns as centres could be established, more would be done towards popularising bee-keeping, I feel sure, than is done at present by the various county associations.—F. V. WHITE, Gloucester.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Substitute for Wiring.—The *Review* gives the following method for preventing foundation from sagging or stretching in brood-frames without the use of wires: "The process is simplicity itself, and consists in painting the upper half of the sheet on both sides with a thin coating of wax. The wax is put on hot with a wide, flat paint-brush. This adds to the thickness of the foundation, which prevents sagging." If frames are not well wired the sheet of foundation stretches as much as, if not more than, where no wires are inserted. Try this new plan.

Revolutionising Apiculture.—I have heard of so many plans, systems, inventions, and discoveries in the past that were to accomplish the above miracle that I have become sceptical of even infinitesimal results following their launching on the stormy seas of beedom. The above-named paper gives us some details about extracting honey without opening hives, with an illustration of the extractor, which does the deed by suction. But as this seems in a nebulous state yet, I select the new system of swarm-prevention discovered by a Dr. Jones, of Minnesota, which is being somewhat boomed in some parts of America at present, although it seems to me like a case of killing the goose which lays the golden eggs. Here it is in brief: "When the hives are full to overflowing open the hives, and with the uncapping knife *uncap all the sealed brood* with the exception of two frames to keep up the strength of the colony." As it appears there is more to follow, I will make no further extract or comment at present.

Sweet Clover.—Our farmers do not grow any, so far as I know, in any part of Scotland. My thanks are due to Dr. Miller for so kindly offering to send me some seed, but "Medicus" (Newcastle) has already forwarded me some of the yellow variety and Mr. Simmins a packet of *alba*, for which I return thanks.

Disinfecting Hives. — Thanks, Mr. Scholl, for your contribution, page 77, *Gleanings*, on this head. Many, if they would put your preaching into practice, might live to bless you. When the disinfection can be carried out in the wholesale way you describe, the laziest bee-keeper can have no excuse for failing. I thoroughly endorse the following: "I have never been able to see why some of the small States that have had foul-brood inspectors for many years are not more free of the disease. At least some cases can be traced back to non-disinfected hives, I feel almost sure." Dr. Miller will note that in the concluding words on page 68 Mr. Root is able to give him only the cold comfort I bestowed on him last month. Mr. Byer's opinion, page 88, is: "His treatment of the disease is worse than useless here, as it simply takes up valuable time and gives no good results. Even after the most thorough purging it will occur in a great many colonies."

Shaking Bees.—Three writers in the February *American Bee Journal* deal with this subject, Messrs. Greiner, Gateley, and Dadant. Referring to a request from the editor, "Has anyone made shaking a success?" Mr. G. Greiner writes: "I jump up and say, 'Yes, sir; I

have.'" Yet his article reads as if his "management" secured the benefits he claims for shaking. Mr. Gateley declares "shaking is not a stimulus to bees." He allows a resulting benefit, but it is due wholly to "certain conditions under which the bees labour in their new environment." He, too, while voting against indiscriminate shaking, considers that intelligent manipulation is imperative and indispensable to successful honey production. Mr. Dadant approaches the subject in a judicial frame of mind. He starts from the premise that "the working force of a swarm is greater than that of the old colony." More bees, in fact, out of every hundred turn their energies to active work. Young bees that might be allowed to loaf and idle in the home nest are actively employed in the new home under differing circumstances. When shaken many are similarly compelled unceremoniously to take a flight, and young bees start earlier in life for the harvest field. Shaking in the breeding season may compel the bees to overstoke the queen, but this is only a temporary circumstance. Indeed, Mr. Dadant's ultimate conclusion is that "disturbance and transportation of bees can have only a limited influence on the success of the colony, and in many cases will do more harm than good."

Australian Prices.—The *Bee-keeper* reports: "The honey crop this season does not appear to be up to the average, and in some districts it is reported short." Yet the *Bulletin* quotes: "Choice-quality honey is selling at 3½d., with an occasional lot at 3¾d. Medium quality is worth 2½d. to 3d."

Good Resolutions.—A writer in the *Canadian Bee Journal* has suffered, like many more of us, from leaving small trifles unattended to at the beginning of winter, and he resolves to profit by his mistakes another year, and not leave undone those things he ought to have done. 1. A mouse's nest was found in his box of foundation on account of the lid not being pressed quite down. Resolved to have all boxed tight next year. 2. Sections piled loosely suffered from the same cause. Resolved to store away thoroughly protected next year. 3. War must be made on these mice, and now (4) some of the very strongest stocks are light in stores. Resolved to keep reserve combs for such an emergency next season. 5. Weaklings have been put into winter quarters, and died owing to paucity of bees. Resolved to have no weak colonies next fall. 6. Goods were ordered too late for an unexpected flow. Resolved to have everything forward in advance. 7. Moths destroyed a bunch of combs. Resolved to sulphur reserve combs periodically in future. 8. Resolved to stop all "leakages," and so to add to profits. Mistakes are sometimes our best teachers.

ERRATUM.—Read final word in last month's "Extracts and Comments" *ding*.

B.B.K.A. EXPERTS IN CALIFORNIA.

The following extract from a letter written to the secretary B.B.K.A. by a lady expert, who with a friend (also an expert) is now in California, is interesting as showing the fraternal goodfellowship which exists between bee-lovers of all countries:—

"We attended the California State Bee-keepers' Convention in Los Angeles—three days of it—and enjoyed it very much. When they heard we came from England and were B.B.K.A. experts, they could not make enough fuss over us, and gave us quite an overwhelming welcome to their midst, and elected us honorary members of their association, which carries with it membership of the American B.K.A. On the last day the vice-president publicly presented each of us with a huge bunch of violets, and said how glad they were we had come. Of course, after this I had to get up and make a speech, which I got through all right, and told them that I was sure that if any of them visited England the B.B.K.A. would extend as warm a welcome as had been extended to us; and I am sure you would endorse this, Mr. Secretary. By the bye, I must congratulate you most heartily on your appointment. I am sure you will make a great success of it, for you are a hustler, as the Americans say, and will make things move. I am sending you the programme of the meetings, and, if I can get them, the reports of the speeches. I hope to start in at bee-keeping as soon as we are settled. Two hundred and fifty stands seems to be quite a moderate apiary out here, and it is marvellous to hear of the huge crops; but this year, I fear, will be a bad one, for there has been no rain practically since December, and therefore the flowers are secreting no nectar.—ROSE SAUNDERS, Poway, Cal."

Echoes from the Hives.

March 20.—Bees had a good flight today, working on willow, arabis, daphne, and coltsfoot. Tempted by the fine weather, I cycled to the out-apiary, situated on the edge of the moors six miles from here, and ascertained that all were breeding except one headed by a queen reared in the early part of May, 1909, and another by a queen which bred abnormally during August and September last. I was told by a bee-keeper of long experience that the queen reared in May would disappoint me in the following spring. This appears to bear out

Doolittle's maxim that queens reared before clover-flow should be pinched.—J. N. KIDD, Stocksfield-on-Tyne.

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

The thriving appearance of Mr. Slote's apiary, which we illustrate this week, shows that he is a capable and intelligent bee-keeper who can make the best of a honey district where big "takes" are not the rule. He does not give us much information as to how he manages his twenty-eight stocks, but that he is able successfully to do so is proved even by the few details he gives. Mr. Slote says:—

"I started keeping bees in the spring of 1901 by buying an old box-hive, being induced to commence by seeing the stocks belonging to a neighbour who kept them successfully. I have now twenty-eight hives of bees. Very few swarms came off last season, only three having issued in my apiary. One of these was the largest I have ever seen; it filled one of the large-size skeps full to overflowing. I also found two queens in a second swarm last year.

"The average 'take' here is about 40 lb. per hive, so it is not a first-class honey district. My largest return from one hive was a swarm and three racks of sections. I think the honey is chiefly from mustard and field flowers. I shall always remember the severe stinging I received while driving the bees out of the old box when making my first start, as this is the only experience of the kind I have had.

"I have been a reader of the B.B.J. for about two years now, and should not like to give it up. I have no interesting experience to relate, so I close by wishing all bee-keepers a good 'take' in the year 1910."

APIARY OF MR. L. SLOTE, ST. MARY'S, RAMSEY, HUNTS.

Queries and Replies.

[4000.] *Keeping Bees in a House.*—I wish to start keeping bees, but the only place where I can do so is in a vacant bedroom at the top of the house. I have no garden, but almost all the houses round me have, some quite large, and there are plenty of trees up and down the road, while within a quarter of a mile there is some open grass-land, but no clover within two miles. I want to know if my neighbours can object. The two houses next to me are empty, and those over the road would be at least twenty-five yards away. Would the bees stand a chance of finding food? I really wish to get used to them, as at the first opportunity I should like to go in for a good apiary.—J. H. D., Norwich.

REPLY.—We know of a number of colonies kept under the conditions you mention, and they do very well, and never interfere with the neighbours. You could try a colony and see what they will do. It is well to live at peace with one's neighbours, and if they do object it is

much better to give up the bees, though it would rest with them to prove that the bees were a nuisance. We do not anticipate that you would have any difficulty on this score.

[4001.] *Transferring Bees from Large Hive.*—I have a stock of bees in a hive large enough to take twelve frames, but in which no frames were put. Wishing to transfer the bees to a ten-frame "W. B. C." hive, would you kindly tell me how to proceed, for I do not see how I can very well place the larger hive on top of a smaller one? Thanking you in anticipation of a reply through your valuable paper.—C. W. H., Haslemere.

Reply.—The best procedure will be as follows: On the first fine, warm day cut out all the empty comb, and loosen the remainder by passing a knife all round the hive-side, so severing the attachment of combs. Draw this mass to the back or side of the hive, and fill up the empty space with frames fitted with full sheets of foundation. The bees will work on to these, and when the queen is found on the straight combs an excluder dummy can be placed between the mass of comb and frames. In three weeks all the brood will be hatched out from the combs not in frames; they can then be removed, and frames having bees upon them put into the "W. B. C." hive.

[4002.] *Spring-cleaning Hives.*—I bought two stocks of bees about a month ago, one being formed by three swarms, which united, and the other is an old stock, that being the weaker. The first-named has ten frames in brood-chamber and another ten standard frames on top filled with honey and pollen, I should say weighing about 40 lb. altogether. 1. Should I shift both lots into clean hives at the end of this month? 2. How shall I dispose of the ten frames full of honey and pollen which are above the brood-chamber, as the section-rack will have to go there later? 3. Must I lift the ten brood-frames out and place them in the clean brood-chamber, and how shall I get the remainder of bees out of the hive which are not clinging to frames?—A. A., Highgate.

Reply.—1. It is necessary to spring-clean each hive. The work is done far better and more easily by transferring the stocks into clean hives. One empty hive will enable this to be done right through the apiary, the one from which the bees have been moved being thoroughly cleansed and the next lot put into it, and so on. 2. These can be used either to put a swarm on to in another hive, or they may be kept for driven bees in the autumn. 3. Yes. Put a board sloping from alighting-board to the ground, as in hiving a swarm, and shake the bees on to this.

EVOLUTION OF THE MODERN HIVE.

BY TICKNER EDWARDES.

The bee-master, explaining to an interested novice the wonders of the modern bar-frame hive, often finds himself confronted by a very awkward question. He is at no loss for words, so long as he confines himself to an enumeration of the hive's many advantages over the ancient straw skep—its elastic brood and honey chambers, its movable combs interchangeable with all other hives in the garden, its power of doubling and trebling both the number of worker-bees in a colony and the amount of harvested honey; above all, its control over sanitation and the breeding of unnecessary drones. But when he is asked the question: Who invented this hive which has brought about such a revolution in bee-craft? his eloquence generally comes to a dead stop. Perhaps one in a hundred of skilled modern bee-keepers is able to answer the query. But the ninety-nine will tell you the bar-frame hive had no single inventor; it came to its latter-day perfection by little and little—the conglomerate result of years of experience and the working of many minds.

This is, of course, as true of the modern bee-hive as it is of all other appliances of world-wide utility. But it is equally true that everything must have had a prime inception at some time, and through some special human agency or other; and, in the case of the bar-frame hive, the honours appear to be pretty equally divided between two personages widely separated in the world's history—Samson and Sir Christopher Wren.

Perhaps these two names have never before been bracketed together either in or out of print; yet that the association is not a fanciful, but in all respects a natural and necessary one will not be difficult to prove.

The story of how Samson, albeit unconsciously, first gave the idea of the movable comb-frame to an English bee-master is probably new to most apiarians. . . . As to whether the cloud of insects which Samson saw about the carcase of the dead lion were honey-bees or merely drone-flies, we need not here pause to determine. We are concerned for the moment only with one modern explanation of the incident. This is that, although honey-bees abominate carrion in general, in this particular case the carcase had been so dried and emptied and purified by the sun and usual scavenging agencies of the desert as to leave nothing but a shell—a very serviceable makeshift for a bee-hive, in fact—consisting of the tanned skin stretched over the ribs of the lion.

In the summer of 1834 a certain Major

Munn was walking among his hives, pondering the ancient Bible narrative, when a sudden brilliant idea occurred to him. Like most advanced bee-keepers of his day, he had long grown dissatisfied with the straw hive, and his bees were housed in square wooden boxes. But these, although more lasting, were nearly as unmanageable as the skeps. The bees built their combs within them on just the same haphazard plan; and, once built, the combs were fixed permanently to the tops of the boxes. Now, the idea which had occurred to Major Munn was simply this: He reflected that the combs built by the bees in the dry shell of the lion-skin were probably attached each to one of the encircling ribs; so that, when Samson took the honey-comb, all he need have done was to remove a rib, bringing the attached comb away with it. Thereupon Major Munn set to work to make a hive on the rib-plan, which was composed of a number of wooden frames standing side by side, each to contain a comb and each removable at will. Since that time numberless small and great improvements have been devised; but, in its essence, the modern hive is no more than the dried lion-skin distended by the ribs, as Samson found it on that day when he went on his fateful mission of wooing.

The part played by Sir Christopher Wren in the evolution of the bar-frame hive, though not so romantic, was fraught with almost equal significance to modern bee-craft. Movable comb-frames were as yet undreamed of in Wren's time, nearly two hundred years before Major Munn invented them. But Wren seems to have been the discoverer of a principle just as important. This was what latter-day bee-keepers call "storification." Wren's hive consisted of a series of wooden boxes, octagonal in shape, placed one below the other, with inter-communicating doors, and glass windows in the sides of each section. Up to that date bee-hives had been merely single receptacles made of straw, plastered wattles, or wood. When the stock had outgrown its dwelling there was nothing for it but to swarm. But by the device of adding another story below the first one, when this was crowded with bees, and a third or even a fourth if necessary, Wren was able to make his hive grow with the growth of his bee-colony or contract with its post-seasonal decline. He had, in fact, invented the elastic brood-chamber, which alone enables the bee-master to put in practice the one cardinal maxim of successful bee-keeping—the production of strong stocks.

Wren's octagon storifying hive seems to have been plagiarised by most eminent bee-masters of his day and after with the naïve dishonesty so characteristic among bee-men of the time. Thorley's hive is obviously taken from, indeed, is probably identical with, that of Wren. The hive made and sold by Moses Rusden, King Charles II.'s bee-master, is of almost exactly the same pattern, but it is described as manufactured under the patent of one John Geddie. This patent was taken out by Geddie in 1675, and Geddie would appear to be the arch-purloiner of the whole crew. For it is quite certain that, having had one of Wren's hives shown to him, he was not content with merely copying it, but actually went and patented the principle as his own idea.—TICKNER EDWARDES in *Pall Mall Gazette*.

(*Concluded next week.*)

WEATHER REPORT.

BARNWOOD, GLOUCESTER.

February, 1910.

Rainfall, 2·92 in.	Coldest night, 4th, 27.
Above average, 1·48 in.	Number of nights with frost in the air, 6; on the grass, 18.
Heaviest fall, 0·52 on 14th.	Relative humidity, 86 per cent.
Rain fell on 23 days.	Percentage of cloud, 63.
Mean maximum temperature, 48·1; 3·1 above average.	Percentage of wind, 38.
Mean minimum temperature, 36·5; 0·5 below average.	
Warmest day, 7th, 54·5.	

F. H. FOWLER (F.R.Met.Soc.).

WESTBOURNE, SUSSEX.

February, 1910.

Rainfall, 4·21 in.	Minimum temperature, 27° on 5th and 10th.
Above average, 2·31 in.	Minimum on grass, 23° on 5th and 10th.
Heaviest fall, 0·69 in. on 20th.	Frosty nights, 9.
Rain fell on 25 days.	Mean maximum, 46·8.
Sunshine, 82·4 hours.	Mean minimum, 36.
Below average, 9·4 hours.	Mean temperature, 41·4.
Brightest day, 27th, 8·8 hours.	Above average, 3·4.
Sunless days, 4.	Maximum barometer, 30·280 on 10th.
Maximum temperature, 53° on 17th.	Minimum barometer, 29·040 on 15th.

L. B. BIRKETT.

FEBRUARY RAINFALL.

Total fall, 4.32 in.

Above average, 2.77 in.

Heaviest fall in 24 hours, .67 in. on 20th.

Rain fell on 25 days.

W. HEAD, Brilley, Herefordshire.

Notices to Correspondents.

G. M. (Surrey).—*Using Old Combs.*—If the other combs are like the sample sent, we should not advise you to use them. There is no foul brood, but the comb contains mouldy pollen and chilled brood, and is altogether unsavoury. Melt them down for beeswax.

H. C. (West Bergholt) and H. J. S. (Harwich).—The secretary of the Essex B.K.A. is Mr. G. R. Alder, Rawreth, Wickford, Essex.

E. R. B. (Staplehurst).—*Australian Bee-books.*—We do not think a book has been published on bee-keeping in Australia. Mr. Isaac Hopkins wrote "The Australasian Bee-Manual," which might be had from Messrs. Pender Bros., West Maitland, New South Wales, and which deals generally with bee-keeping in Australasia.

A. B. C. (Tarrant).—*Sugar for Bee-food.*—The sample sent is good cane-sugar, and though unrefined it may be used for bees in spring (when they are able to take frequent cleansing-flights) with perfect safety. Loaf cane-sugar is good for either spring or autumn bee-food. Thank you for kind appreciation of B.B.J.

E. J. S. S. (Birmingham).—*Clarified Honey.*—You have unfortunately burnt the honey when clarifying it, and it is now unfit to use for bees; otherwise it would have answered very well.

L. Bigg-Wither.—*German Translation.*—Dr. Fleischmann's book has not been translated into English, and we have not heard of its being proposed. We could give you the address of a translator, but it would be an expensive process, 2s. 6d. per folio being the usual charge for technical translations from the German.

W. H. S. (Bushey).—*Death of Stock.*—There has evidently been a fertile worker in the stock, which is shown by the preponderance of drone-comb and the elongated cells. There is no disease so far as we can judge. We should not advise using the combs for other stocks, even though they are full of honey. It is safer to melt them down. The bees sent are old ones which have died off during the winter, and, there being no young worker-bees to take their places, the stock has died out. No fee is charged for replies to queries.

G. C. (Windlesham).—*Bees Dying.*—The bees sent are quite healthy, but have died of starvation. You can use the combs again.

Inquirer (Edmonton).—*Bee-districts.*—Bognor is fairly good for bees, though places on the sea coast are always at a disadvantage in having one side of the radius of flight cut off by the sea. The county of Hampshire is a good one generally for bees, and we believe Farnborough is no exception. You might communicate with the respective bee-association secretaries if you desire further information. The hon. secretary of Sussex is Mr. E. Powell, Clayton Nurseries, Hassocks, and of Hants, Mr. E. H. Bellairs, Bransgore, Christchurch.

A. B. C. (Llandudno).—*Dysenteric Bees.*—Your bees reached here in a very wet and decomposed condition, and appear to have succumbed to dysentery. The comb should not be used again, but be destroyed, and the hive thoroughly scrubbed and disinfected before using again.

D. S. (Ayrshire).—*Using Formalin.*—The *cure* is quicker if combs are sprayed with the solution, but the process takes about the same time as when used in any other way. Yes, you can use a 10 per cent. solution for spraying with safety.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Uncapped Brood.—In almost every apiary at some time or another such brood is found. We are told in *Practischer Wegweiser* that this happens when colonies are weak and do not contain sufficient bees. Upon investigation it will be found that the uncovered chrysalids lie in lines. Neither the queen nor the workers are responsible for this, as it is due to creeping maggots, which eat the cappings. Bees do not cover the cells with pure wax, as this by itself is not sufficiently porous to allow the inmates to breathe. There should also be below the cappings the skin of the pupa, but this is absent. The creeping maggots are the larvæ of the large wax-moth, which are hatched as little worms in crevices of the hive, then climb on to the combs, and eat their way along the cappings just above the heads of the chrysalids. One often sees how rapidly these wax-moth maggots escape into some place of safety from the bees. If bees are given an empty comb containing wax-moth they are not able to get rid of it, and it remains there for future mischief. For this reason every comb should be fumigated in the autumn with brimstone. The maggots can be induced to leave the combs by jarring the frames, when they can be destroyed. Frequently when they have done their work the larvæ will not be found on the combs of uncapped brood, but in the adjoining ones, and must therefore be hunted out, as this is the only means of preventing the continuance of the mischief.

Starting Queen-cells.—Hans Pechaczek describes a method of obtaining a large number of queen-cells in the *Bienen Vater*. He gets a comb filled with eggs laid by his best queen. When the oldest larvæ are one day old, the comb is cut on one side into strips somewhat like those in the "Alley" method, except that the cells are only cut down to the midrib. Scrape away with a chisel the cell-walls between the strips, and leave neither larvæ nor eggs in the portion scraped away. Then destroy the eggs or larvæ in every other cell of the strips. Place this comb flat, with the prepared side downwards, on a strong queenless colony that has no young brood. Raise it sufficiently above the top bars of frames to enable the bees to lengthen out the queen-cells without their reaching the frames below.

Bee-hygiene.—Writing on this subject in *L'Apiculture Nouvelle*, M. L. Forestier points out how particular bees are with regard to cleanliness, and says that they are very sensitive to bad odours. If the bee likes cleanliness for herself and in her dwelling, she also expects it in others, and shows her dislike sometimes in a very pronounced manner. She is always less aggressive towards a cleanly visitor, free from any particular odour, than towards one who perspires, or whose clothes are impregnated with the emanations from a stable, or whose breath smells of alcohol. M. Forestier mentions several characteristic examples of which he has had experience. He says in one case he and a friend were examining some colonies which had been sold, and which they were preparing for their journey. At a certain moment they required the help of a third person for a few minutes. The farm lad who understood bee-keeping volunteered his services, but this time he reckoned without his host, or rather his bees. Hardly was the hive lifted from the floorboard than the bees, previously perfectly quiet under manipulation, rushed out and literally besieged him. Surrounded by an infuriated swarm of bees, he threw down the board which he was removing and made his escape, frantically waving his arms to keep them away. Although M. Forestier and his friend came to his rescue, they found it difficult to calm him, and they also had to suffer in consequence; but the writer points out that there was a marked difference in the number of stings each received. For about ten bees which followed them there were hundreds which attacked the lad, who for a long time afterwards remembered the event, which, fortunately for him, had no sinister results. M. Forestier can only attribute the anger of the bees to the fact that the lad's clothes smelt of the stable, which he had just left to give the help needed. After a time the bees became quite calm, and the work could be proceeded with. Another example shows their objection to the smell of alcohol. M. Forestier was asked to purchase some bees, and meeting the owner, who had just come from a *réunion* where wine was not stinted, the latter asked him to go and look at the colonies. M. Forestier says he had seldom seen such aggressive bees, which, however, principally attacked his companion. Instead of quieting them, smoke only seemed to irritate them, and it was therefore necessary to abandon the inspection. Some days later, although the weather was less favourable, the bees allowed manipulations without even attempting to use their stings. Their irritability was certainly due to some odour to which they had an antipathy. The friend recognised the fact, and said that he had always noticed that the bees were particularly vicious when he ap-

proached them after having drunk wine or liqueurs, as they could not stand his breath.

M. Forestier says what is true with regard to clothes and the breath is equally true with respect to the hands, and many stings could be avoided by taking proper precautions. It often happens that the bee-keeper passes from examining one hive, with the odour of which his hands are impregnated, to another, and is astonished at the resentment of the bees, when a simple washing of the hands would have resulted in quite a different behaviour on their part. He relates a series of experiments which he made to determine what odours were agreeable or disagreeable to bees. In one case he impregnated his hands with the odour of the hive which he wished to manipulate by crushing some drones and rubbing them between the palms of his hands, and so long as the odour persisted and he worked quietly no bee attempted to sting him. If, however, he attempted to manipulate another hive, which had not furnished the drones, while this odour still emanated from his hands, his interference was promptly resented. He therefore recommends that a pail of water should always be at hand in which the hands could be washed, and a few drops of formic acid can be added to the water with advantage. All appliances used in an apiary should also be washed before using again on another hive, which will prevent bees from attacking the bee-keeper, frequently due to some smell that may be repugnant to them.

NORTH NORFOLK B.K.A.

ANNUAL MEETING.

The annual meeting of the North Norfolk Bee-keepers' Association was held in the Concert Hall, Holt, on March 14. Mr. H. Bond presided, in the absence of the Rev. W. H. Marcon, and there was a fair gathering of members and friends.

The chairman said as an association they were very sorry to lose so able a secretary as Mr. Cooke. He had been an energetic, trustworthy, and able worker, and it would be a most difficult matter to fill his place.

Mr. Cooke thanked the meeting for its appreciation of his services. He regretted his severance from the society after so many years. He had been the forerunner of the society in this district, and had had the work at heart.

It was agreed to circularise the members on the question of the selection of a secretary, and to call a special meeting on April 4 to appoint one.

The election of officers resulted as follows:—President, Lady Hastings; vice-presidents, the Master of the Rolls, Mr. H. W. A. Deterding, Mr. H. Douglas King, and Mr. Noel Buxton; committee, Rev. W. H. Marcon (chairman), Miss Leaver, Mrs. A. Preston, Messrs. W. Towler, H. Woolsey, E. Mann, J. Platten, C. Clarke, J. Carr, Rev. T. E. Platten, W. Norman, H. Bond, A. Woodhouse, B. J. Mitchell, Rev. A. D. Downes Shaw, and R. Mann; bee-experts, Rev. A. D. Downes Shaw, Messrs. J. Platten, E. Mann, and B. J. Mitchell.

The annual report and balance-sheet were read by Mr. C. J. Cooke. The report stated that the work of the association was becoming gradually more widely known, and it was encouraging to record that nineteen new members had been enrolled. The balance-sheet showed income amounting to £21 7s., the chief items being subscriptions £18 5s. and grant from Technical Education Committee £1 5s. The expenditure was £21 7s.

The experts' report was prepared by the Rev. A. D. Downes Shaw, and many interesting points were touched upon. The members were advised not to take too much of the honey harvest, but be content with a reasonable return, and leave the busy worker a fair share of food for winter. A fault was the lack of interest taken by some of their members in their bees. Often the expert was left alone when he made his inspection, the owner going elsewhere. If an expert was to be of any use it was as a teacher.

The balance-sheet and reports were unanimously adopted.

The Rev. A. D. Downes Shaw addressed the meeting on the reorganisation proposals of the British Bee-keepers' Association, and an interesting discussion ensued. The following resolutions were carried, and ordered to be sent to the B.B.K.A.:—(1) "That this meeting is of opinion that a strong central body is essential for the general advancement of apiculture." (2) "That the North Norfolk Bee-keepers' Association is not prepared to accept the proposed scheme of the British Bee-keepers' Association, preferring to retain its independence as a county association rather than become a branch of the Central Association, but that it desires to remain affiliated to the Central Association as heretofore." (3) "The members of this association learn with satisfaction that the British Bee-keepers' Association is determined to strengthen its Council, and the association is prepared to support this effort as far as possible."

In the course of further remarks the retiring hon. secretary said the society did not receive the financial support it deserved from the County Council. He moved: "That this meeting of the North Norfolk Bee-keepers' Association desires to express its wish that a greater effort

than hitherto should be made by the Norfolk County Council towards the advancement of apiculture in Norfolk." The motion was unanimously carried, and ordered to be sent to the County Council and to Lord Hastings, the local representative on the Council. Votes of thanks to the retiring officials and to the chairman closed the meeting.—(*Communicated.*)

NEW B.K.A. FOR MONMOUTHSHIRE.

The Rev. H. G. Stanley presided at a meeting in the Waters Lane Hall, Newport, on Saturday, the 12th inst. The meeting was called for the purpose of forming a bee-keepers' association for Monmouthshire.

The rev. chairman said it was desirable that bee-keepers in the county should be brought more closely together, as they had hitherto been very scattered.

Mr. W. Herrod, F.E.S., secretary of the British Bee-keepers' Association and instructor in bee-keeping at Swanley College, delivered an interesting lecture on bee-keeping. At the close of his lecture Mr. Herrod said that in most counties there were associations affiliated with the British Bee-keepers' Association in London. An association would be of great help to all bee-keepers. Unity was strength. An expert could be engaged to visit members and give them valuable advice, and it would also stimulate exhibiting, and by that means make a good market for the honey.

Business was afterward discussed.

The Rev. H. G. Stanley stated that Viscount Tredegar was very much interested in bee-keeping, and there was no doubt his Lordship would become president.

Mr. H. Webb, Llwynarthen, expressed willingness to give his support to the movement. He would be ready to discharge the secretarial duties free for twelve months.

Mr. Thos. Wilcox, certified expert, Talywain, proposed the formation of an association for Monmouthshire, and said he was quite willing to give any little knowledge he had of bees to members. He could at least help them to spend their money on bees and their requirements.

It was unanimously decided to form the association.

On the motion of the Rev. H. G. Stanley, Viscount Tredegar was elected president. Lord Llangattock, Lady Mather Jackson, the Hon. Mrs. Herbert, Lady Amy Platt, Colonel Curre, Judge Hill-Kelly, Messrs. H. Webb, C. D. Phillips, and W. R. Lysaght were, subject to their consent, elected vice-presidents.

On the motion of Mr. Coslett, the Rev. H. G. Stanley was appointed secretary.

A committee was also elected. Anyone wishing to become a member should address the Rev. H. G. Stanley, Marshfield Vicarage, Cardiff.—(*Communicated.*)

BECKENHAM, BROMLEY, AND DISTRICT B.K.A.

LECTURE AT BECKENHAM.

The monthly meeting of the above association was held on Wednesday, March 23, when Mr. W. Herrod gave a lantern lecture at the Lea-Wilson Room, Beckenham, on "Bee-keeping for Beginners" before an appreciative audience of over one hundred and fifty people. Dr. G. T. Giddings, president of the association, who was in the chair, in introducing Mr. Herrod, said that he had known him for nearly twenty years, and that what he did not know about bee-keeping was not worth knowing, and he was sure that the audience would enjoy the lecture.

Mr. Herrod commenced by saying that the first thing necessary for a start was a proper hive, and in his experience he had found the one known as the "W. B. C." hive the most suitable for profitable bee-keeping.

Having described how to stock the hive, and showed, by means of slides, how necessary it was to use full sheets of foundation, he explained the necessity of the same being wired, showing how this was done, and how imperative it was to have pure wax foundation to avoid broken combs.

It was important to put supers on at the right time, otherwise the bees might swarm, and so one lost part of the honey-flow. The second super should be put on when the first was about two-thirds full. It was also very necessary to have proper quilts; if these could not be afforded, paper was an excellent substitute, but it was essential that they should properly fit the hive, otherwise there was the possibility of draughts, which would be detrimental to the welfare of the colony. If paper was used, a piece of ticking, fitting neatly, should be placed next to the frames. Specimens were shown of home-made hives, but the lecturer explained how necessary it was for workmanship to be exact, even to the sixteenth of an inch, so that if the novice had not the necessary tools or ability, it was far better to buy a hive from a reliable bee-appliance maker. It was advisable to buy a good hive as being cheaper in the end and saving much disappointment and frequently loss. For their preservation it was necessary to paint hives, at least once every three years, with two coats of paint. White was the best, but this colour so quickly got dirty that a stone colour was the best compromise. The roof should be painted white. It was also necessary to

paint the under side of the floorboard, as the damp rising from the ground caused it to decay if this was not done. The best position for a hive was to face south-east.

When manipulating it was advisable to have a veil, if not actually in use, ready to cover the face in case of necessity. He made a practice of doing this himself. Gloves tended to clumsiness when manipulating and should be discarded. Any brusqueness or hasty movement should be avoided, as this tended to make the bees spiteful. The lecturer impressed on his audience the necessity of having everything in perfect readiness for use before opening a hive; then they should smoke in at the entrance first, and give the bees half a minute to gorge themselves with honey. Two or three light puffs from the smoker should be given on the tops of the frames, and frames not being manipulated should be covered with spare quilts.

In looking for the queen, if the bees were clustered thickly Mr. Herrod advised his hearers to be careful not to blow on them, as they would probably fly straight for the operator's mouth and sting it. The bees should be gently pushed aside with the finger. One need not be afraid of them stinging, as the sting was situated on the under part of the body. One should also avoid going near the hives when hot or perspiring, another of the great secrets being to have cool, dry hands. He advised washing the hands in cold water before manipulating.

Mr. Herrod then went on to give some advice to the older and more experienced bee-keepers, stating that up to now, *i.e.*, spring, candy should have been the only food supplied to stocks in want of it, but from this time syrup should be given, and he advised the use of the "Raynor" pattern feeder. Syrup should be given slowly, limiting the quantity to what the bees could use, not what they would take.

All the wax gathered from spring-cleaning, brace-combs, &c., should be saved, and it was a good plan to have a solar wax-extractor at the entrance to the apiary, so that on leaving the cover could be lifted and the wax thrown in, when, without any more trouble on the part of the bee-keeper, it would be rendered down into a saleable article. Much of this valuable product was wasted at the present time through ignorance and carelessness.

After a hearty vote of thanks to the lecturer and the chairman, Mr. E. R. Seadon explained the working of the "W. B. C." hive, an excellent specimen of which he had provided, embodying all the latest improvements.

He was thanked for this, and also for so kindly providing and manipulating the lantern.—J. WHITE, Hon. Secretary.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ISLE OF WIGHT DISEASE.

[7779.] Seeing the letter on page 88 of the B.B.J. for March 3 about the I.O.W. disease, I thought you would be interested to hear that all my bees are dead with the exception of one lot in a skep. I tried to winter two hives that I knew were already sick in the autumn, but about a fortnight ago I noticed no bees were going in and out on a fine day, although previously on fine days during the winter they were flying freely; in fact, I now conclude many flew away to die, since when opening the hives so few bees were left, and all were dead. If, as Mr. Simpson seems to think, the disease may be due to the wax being infected, where can one rely upon getting a three-hours-boiled wax to re-start the season with? I have destroyed all my combs and disinfected the hives in three different ways. I hope to get a swarm from the skep by the end of April, as the bees are very strong, busy gathering pollen, and I am feeding them with soft candy as well, and, provided we get a little fair weather, I may be fortunate.

I am inclined to believe, with the German professor—Dr. Zander—who wrote about the disease in the autumn numbers of the B.B.J., that it is more than acute dysentery. My hives are placed on rising ground at the back of a large greenhouse, and the roof was covered with the excreta exactly as he described it (as were also the alighting-boards), and in which the infection lies. I only wish he had said for how long the germs could remain active and infectious, since the spot is the most convenient in the garden for the hives, being close at hand and out of the way of visitors. (The skep is at the top of the garden, as it was a stray swarm, and I had no hive to put the bees into.) I wish to put the swarms and any bees I may perhaps buy in the same place. I have had the ground dug up, and myself sprayed it with carbolic, as recommended in the JOURNAL, half a dozen times.

I am afraid this is rather a long letter, but I should be much obliged if you would answer me in your journal as to where I could obtain the pure wax and if you know how long the germs are likely to remain infectious.

The rains have washed all signs off the greenhouse, so may I hope that they

have also cleansed the rest of the garden? Thanking you in anticipation.—E. M. G., Ventnor.

[The disease has been too short a time under investigation to ascertain the vitality of the germs, and we have not seen if their thermal death-point has been determined; but Dr. Zander answers your questions on these points in the following letter, which we have just received.—Ed.]

The thermal death-point of Nosema spores is very difficult to determine, because the spores cannot be grown on ordinary culture media, but have to be given to bees in food. Therefore, if one is not certain that the bees are free from Nosema, mistakes are easy. I have been making such experiments for some time, and so far I am able to say that Nosema spores are not so resistant as those of bacteria. At any rate, spores that have been boiled for five minutes seem to have lost their vitality. I therefore do not think that the disease is spread by the wax or comb-foundation, when even the possibility of its being so cannot be demonstrated. On the other hand, my observations have shown that, besides the infection from soiled combs, the disease is spread outside the hive through the discharge of fœcal matter. The multitude of spores in the evacuations are spread all round the neighbourhood of the apiary. For this reason the danger is very great, as the spores are taken up by healthy bees with the liquid they obtain from the flowers. At any rate, this is how I account for the difficulty in getting rid of the disease when it has once got a footing in a district. The duration of life of Nosema spores can hardly be determined, owing to the short time they have been under observation. I have, however, seen that after a year or a year and a half they still preserve their vitality. I will inform you of the results as soon as my trials are completed.

B.B.K.A.s AND HONEY DEPOTS.

[7780.] I should like it known that there is another bee-keeper who thinks as Mr. F. V. White, of Gloucester (B.B.J., page 117) does. Connection with an association will do very little good to me, but I would readily pay 10s. per annum to one that would dispose of my produce at a reasonable price.

This morning (Easter Monday) I had a visit from one of the craft, who informed me that he often purchased honey at 4d. per pound.

Such competition as is indicated here ought to be stopped—the sooner the better.—H. J. Sparkes, Hants.

Queries and Replies.

[4003.] *Transferring Bees from Barrel.*—Can you advise me as to how to hive a swarm in the following circumstances? The swarm is a wild one, and was hived in an old barrel hung on a wall about 5 ft. from the ground, facing north. I should like to get the bees into a bar-frame hive, and move it to a place alongside my other hives about 50 yards away. Is it worth bothering about, or should I just wait for a swarm to issue, hiving it in the usual way, and leave the old swarm alone? I should be very much obliged if you could tell me what to do.—J. D. G., Glasgow.

Reply.—It is a case of transferring a stock, not a swarm. There is a vast difference between the two, a swarm being minus combs, while a stock has both combs and food. You can remove the barrel, take it a couple of miles away, and let it remain for a week; then bring it back, and place it in the position you wish the stock to occupy permanently. Let the bees transfer themselves into the frame-hive as described on page 149 of the "Guide Book." If the barrel is whole, it will be necessary to remove one end.

[4004.] *Skep of Bees Damaged in Travelling.*—I have just received a skep of bees packed in a sack, of course arriving in a most distressing state, probably having been pitched about like a sack of potatoes by railway porters unaware of the contents, the gardener who dispatched them evidently not knowing how to send bees by rail. What is the best course to adopt, all the combs having broken away? Should I tie combs into frames and put into new hive, or place the skep on top of frames and let the bees transfer themselves, or allow the whole to remain until they have sufficiently recovered and then transfer, or unite them to another stock? Of course, if the queen is killed the latter is the only alternative.—Complex, Canterbury.

Reply.—In all probability the stock of bees is completely ruined. The best plan will be to take out the combs which remain whole, containing either brood or food, tie them into frames, and put into new hive, confining them by dummies to the few combs they will cover. Feed the bees for a time by means of a bottle feeder. The work of transferring must be carried out on a warm day and in a position sheltered from wind.

[4005.] *Transferring Bees.* — Last autumn I bought ten stocks of bees in skeps. They have wintered well, and I should like your advice as to the best process to make a profit out of them in the coming season. I have bought new frame-hives, and thought of transferring most

of them, but I see in the B.B.J. that they will do very little more than establish themselves in the first season. Will not they do better than that if left in skeps? Kindly tell me what you would do yourself in the same case.—A. W., Stourton.

REPLY.—If you follow the instructions given on page 149 of the "British Bee-keeper's Guide Book" you will, at any rate, be able to take off the skep filled with honey and get the bees into workable hives—*i.e.*, if the season is at all favourable. If you wish to make the most out of your colonies, and have both combs and bees under control, working to the best advantage for the production of honey both for quantity and cleanliness, then get them transferred into frame-hives during the coming season. This would be our plan.

[4006.] *A Beginner's Queries.*—I enclose specimen of bees taken from a stock which I found dead on spring examination. When I closed down the hives in the autumn I found on the floor of this hive some black larvæ similar to the ones I enclose. 1. About six weeks ago I slipped in a cake of candy; the stock was then alive. The candy has hardly been touched, and there is not a live bee left. The bees from this particular stock, about four weeks ago on a sunny day, came out in large numbers; since then there have been many dead bees ejected from the hive. 2. I shall be glad if you can tell me the cause of the loss, and what precautions I should take with my other hives situated quite near, the bees of which have been visiting this empty hive. Has it had foul brood, and what shall I do with the fittings, combs, &c., belonging to it? 3. In *Farm, Field, and Fireside* a writer on bees strongly recommends the use of a honey-press in preference to an extractor. He also says that some of the most prominent bee-keepers for the last twenty years have discarded the extractor and adopted the method of pressing. I cannot remember seeing this point discussed in the JOURNAL, and it would be interesting to many to have the experiences and recommendations of some of your readers on this point. 4. The writer above referred to also mentions the use of a special super for crushed honey. Can you give me particulars of the press and rack used, and where same can be obtained? 5. I started with three swarms last season, the age of the queens being unknown to me. Do you recommend the introduction of new queens this season to my remaining stocks? I have been advised to try Sladen's Golden strain of bees. Do you think this better than the ordinary English black? I should like to say that I appreciate the JOURNAL, and look forward to it every week, and have handed it round to some of my friends who intend to start in the craft this season.—W. J. W., Plymouth.

REPLY.—1. Some of the bees are badly affected with dysentery. What you take for black larvæ are bees that have died from wet and whose carcases have been nibbled by some insect which has had access to the hive. The colony has dwindled and eventually died out, owing to lack of young bees to replace the old ones, due to brood-rearing ceasing too soon last autumn. 2. Keep the other colonies warm and well provisioned, and watch them. We cannot tell if you have had foul brood without seeing some of the brood-combs. 3. The honey-press is only used for heather honey, as this cannot be extracted in the ordinary way, but no bee-keeper of any experience would think of using it in preference to an extractor for ordinary honey. We know of no prominent bee-keeper who has discarded the extractor. 4. We do not know of any special super for crushed honey. The presses used can be obtained of dealers advertising in this journal. 5. Yes; see "Guide Book" (page 124). The Golden strain of bees are very good, and better than a great many black bees that are raised without proper selection.

[4007.] *Carbolic Cloth.*—In the article on page 64 of the B.B.J. "Medicus" speaks of "carbolic cloth." Will you explain what is meant by this and how it is prepared? Excuse me for troubling you, and anticipate thanks.—L. BONDONNEAU, St. Adriox, Le Havre, France.

REPLY.—This is very often used in this country to quieten bees, as it causes less disturbance than smoke. It is prepared as follows: Put 1 oz. of carbolic acid (Calvert's No. 5 is used here) into a bottle containing 2 oz. of water. Take a piece of calico the size of frames to be covered, and sprinkle it with the solution, just sufficient to damp it slightly; then roll it up, and keep in a covered tin until required. When about to examine the bees, gently strip off the quilt, and at the same time pull the carbolic cloth over the frames. After a few seconds the bees will go down, and the cloth can be folded back while the frames are examined.

Echoes from the Hives.

I write from the centre of a district which is known as the Garden of England, in the fertile Vale of Evesham. Bees here are in good condition, and are busy carrying in pollen from the gardens near the town and villages. Should the weather continue fine, the fruit-trees will be in bloom within a fortnight, from

which the bees gather immense quantities of honey (always dark). I have extracted supers from strong colonies many times by the first week in May through the abundant supply of fruit-blossom. Bee-keeping is looked upon as a profitable side-line to market-gardening, and I am pleased to say I have heard of no failures up to the present, so far as our association members are concerned. We are adding members yearly, and hope to admit many more this season.—J. S. BAILEY, Expert (Evesham), Worcs B.K.A.

Bees are very backward this season in this district. I hope we shall have a better season than last.—G. M., Milton Bridge, Midlothian.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Clipping Queens (page 84).—My own situation is close to a river, and a swarm-hunt on the other bank would, even if not futile, involve a double excursion of at least two miles. So my ideas run very favourably towards swarm-catchers and clipped queens. The spiral cage (page 85) is by no means difficult to use. The queen is easily trapped in it, and when she has reached the small end she is prevented from returning, and a wing is carefully drawn through by means of a pin, and clipped. There is thus no danger of "sawing a leg off," as these remain safely in the tube.

Opponents of Foul-brood Law (page 85).—One of the unfortunate conclusions to be drawn from the strong opposition of anyone to a Bill is that *he has got foul brood in his own apiary!* If he has not, surely it is to his advantage that his neighbours' should be healed. And if the district be free from disease, no one would be troubled at all. But the eradication of disease is to his advantage in any case, if he could but see it. Experts would not be likely to misuse their powers, and might be trusted to give a capable bee-keeper all reasonable liberty in his effort to rid himself of disease, having due regard to the season. I am, however, an advocate of thorough treatment, being of opinion that failure in the past has been largely due to lack of thoroughness, or to the responsibility being allowed to rest with the bee-keeper. Thorough treatment may yet save considerable value from the wreck, and minimise the loss. Even were drastic treatment universal, the loss would be the first and least loss, and, all being treated alike, the ever-present danger of recurrence from infection would be considerably reduced. Let us therefore, big men or little men, join hands to secure this time a satisfactory foul-brood law.

Croydon B.K.A. (page 89).—By the courtesy of the hon. secretary, I have received a copy of rules and syllabus, and I am impressed with the common-sense and interesting nature of these. I wonder what percentage of members attend the monthly meetings. Undoubtedly it is these small associations which are likely to attract the local member. If the hon. secretary lives up to his text of "Work, work, work," the association is much to be congratulated.

Fish, Flesh, or Fowl (page 97).—A repast washed down by champagne after the wedding feast! Such a diet would surely be subversive of the much-vaunted morality of the hive-bee (page 103). We have always regarded her as a superior sort of being, and she, no doubt, views us in turn with corresponding contempt, based perhaps upon her acquaintance with our anatomy, learned from sundry wingless, legless, or altogether amorphous corpses obtruded upon her notice. Colonel Walker's verdict would seem to be "Not proven," although a bee which had partaken freely of the strong waters provided for it by a bridle party might at least be expected to take a bit within its teeth.

How to Clip a Queen (page 98).—"Medicus" will not, I trust, resent the compliment if I criticise his plan by suggesting that we do not all possess his implied dexterity. Indeed, one would need to be ambidextrous to manipulate alike successfully forceps and scissors. The help of a friend is not essential, and if it can be managed his plan has the merit of speed. I prefer, however, the cage method, to which I have referred above, if there is any necessity to be cautious, although I usually employ the familiar finger and thumb.

Clipped Queens (page 98).—One of the many plans which I am "one day" going to try consists in the provision of the extension alighting-board, having its sides converging. This makes it an almost triangular, two-sided tray, with its apex towards the ground. Immediately in front of this a small bough is to be stuck into the ground, poacher's foe fashion. The theory is that the clipped queen, tumbling down the board, and guided by the sides towards the bough, will, on discovering her inability, crawl forward, and, finding the bough, will proceed to climb it. It may be well that the bough should incline from the hive. I cannot now recall where the idea came from, but it is here recorded for those who may care to try the plan. Perhaps I need hardly explain that subsequent procedure consists of the unhurried gathering of a clustered swarm. The bough should be of a suitable size.

and firmly enough fixed to carry the record swarm of your dreams!

Drone-breeding Queen (page 99).—All the circumstances should be noted as far as possible, and dates are of importance as showing any hiatus in the egg-laying. In this case it is just possible that the two queens co-existed. The theory of M. von Dobratz (page 93) that drone-eggs are the product of fertile workers might perhaps apply, but such brood is usually identifiable by its irregularity of age and placing. There used to be a tradition that queens generally laid a few initial drone-eggs, but I have often looked for them in vain.

"*For the Spring, the Spring is Coming.*"—Almost one might say that it is here, and they are indeed slow to perceive who must wait for the swallows to tell them so. Yesterday (Easter Sunday) the air seemed to be full of the note of renewed life and joyful activity. The bees, but lately busy in the crocus cups which emblazon our small grass-patch, were twinkling into the hives with their bright little loads, and rushing forth again as though they had performed the whole duty of bees. This morning, too, I went for my before-breakfast stroll with the dogs, whose thoughts were set on lower things, such as rats and moles, along the river-side, where the palm willow and the catkined alder are in full pollenacious glory. Looking along the breast-high pasture, I could see, gleaming in the already-hot sun, that each blade of grass held impaled a drop of brilliant dew, captive of its spear courageously won from the night mist. Gazing into one of these crystal spheres, I saw spread out the coloured pageant of the spring and the succeeding panoply of summer. So I looked no more, having had my fill of winter, and believing that, although other frosts may come, to-day at least spring is ours, and perhaps to-morrow summer also.

EVOLUTION OF THE MODERN HIVE.

BY TICKNER EDWARDES.

(*Concluded from page* 121.)

But Wren's hive, good as it was in comparison with the single-chambered straw skep or wooden box, still lacked one vital element. Although he and his imitators had realised the advantage of an expanding bee-hive, this was secured only by the process of "nadiring," or adding room below. Thus the upper part of Wren's hive always contained the oldest and dirtiest combs, and as bees almost invariably carry their stores upwards, the production of clear, uncontaminated honey under this system was impossible. It remained for a Scotsman, Robert Kerr, of Stewarton, in Ayrshire, to perfect, some hundred and fifty years later, what Wren had so ingeniously begun.

Whether Kerr—or "Bee Robin," as he was called by his neighbours—ever saw or heard of hives on Sir Christopher Wren's plan has never been ascertained. But plagiarism was in the air throughout those far-off times, and there is no reason to think Kerr better than his fellows. In any case, the "Stewarton" hive, like Wren's, was octagon in shape, and had several stories; but these stories were added above as well as below. By placing his empty boxes first underneath the original brood-chamber, to stimulate increase of population, and then, when the honey-flow began, placing more boxes above to receive the surplus honey, "Bee Robin" succeeded in getting some wonderful harvests. His big supers, full of snow-white virgin honey-comb, were soon the talk of Glasgow, where he readily sold them. Imitators sprang up far and near, and it is only within the last twenty-five or thirty years that his hives can be said to have fallen into desuetude.

But probably his success was due not more to his invention of the expanding honey-chamber than to two other important innovations which he effected in bee-craft. The octagonal boxes of Wren had fixed tops with a central hole, much like the straw hive still used by the old-fashioned bee-keepers to this day. "Bee Robin" did away with these fixed tops, and substituted a number of parallel wooden bars from which the combs were suspended, the spaces between the bars being filled by slides withdrawable at will. He could thus, after having added a story to his honey-chamber, allow the bees access to it by withdrawing his slides from the outside; and when the super was filled with honey-comb, the slides were again employed in shutting off communication, whereupon the super could be easily removed.

This, however, though it greatly facilitated the work of the bee-master, did not account for the large yields of surplus honey, which the "Stewarton" hive first made possible. In the light of modern bee-knowledge, it is plain that a big honey-harvest can only be secured by a correspondingly large stock of bees, and Robert Kerr seems to have been the originator of what was nothing less than a revolution in the craft. Hitherto the bee-keeper had estimated his wealth according to the number of his hives, and the more these subdivided by swarming, the more prosperous their owner accounted himself. But "Bee Robin" reversed all this. He housed his swarms not singly, but always two at a time; and he made large stocks

out of small ones by the simple expedient of piling the brood-boxes of several colonies together. In a word, it was the "Dreadnought" principle applied to the peaceful traffic of the hives.—*Pall Mall Gazette.*

THE GREAT TRADE IN HONEY.

THE CONSERVATION OF THE BEE.

The *Bulletin of the International Bureau of the American Republics* for February contains an interesting paper on honey, by Mr. Russell H. Millward. It is not known, he says, of which country the bee is a native, though it is known for a certainty that primitive man kept bees and gathered honey, which he ate himself and offered to the gods as an oblation. In both Egypt and Mexico honey has been found, in excellent preservation, in hermetically sealed vessels among prehistoric ruins. In Mexico bees were known long before the days of Cortes, and there are plenty of wild bees there now.

It is "conservatively estimated," says the writer, that over 300,000 tons of honey are produced annually, the American Republics yielding about two-thirds of this amount. The demand for honey has now become so great, and the conservation of the bee so important to the American Republics, that the United States Department of Agriculture has set aside about £2,000 annually for the study of apiculture, and many State and agricultural colleges are also occupied with the subject. In South and Central America and Mexico the stingless variety of bee is a native, but there are many other varieties. The value of the honey now produced yearly in the United States alone reaches about £4,000,000, and that of beeswax about £400,000. The United States do not find this enough, and have to import about 2,500,000 lb. of honey and about 750,000 lb. of beeswax annually, which come chiefly from Cuba and the Central and South American Republics. Of the different varieties of States honey, Californian sage honey is considered as good as any.

A TURKISH BEE-KEEPER.

[Photo sent by Mr. Claude Warner, of Constantinople.

Immense quantities of honey are used for making cakes, biscuits, and confectionery in the United States, Germany, England, and France. Over one-half the world's production of honey is probably used in confectionery and medicinal preparations, and new uses are being constantly found for both it and beeswax. And it might certainly be said that were honey as cheap as jam much more of it still would be used. The reason why honey is preferred to sugar by bakers and confectioners is that cakes made with it keep so much better than others.

Beeswax, which is a separate industry from that of honey, is used for making

candles and tapers, which are excellent for burning in churches, as they do not injure fabrics or pictures; in varnishes, polish, &c.; as a preventive against rust of machinery; by laundries as a polish for finishing starched articles; by chemists as a basis for salves, and in plasters and certain ointments; by dentists for taking impressions of the mouth, and in a great variety of other ways.

In Argentina honey is in such demand that over 100,000 lb. has to be annually imported; and the Agricultural Department of Brazil is now making efforts to develop apiculture and increase the output of honey and beeswax. In Brazil there are many varieties of bees, and some of the local flowering trees are excellent for honey. The Government encourage vanilla planters at Sao Paolo to keep bees, and in one way and another a great deal of honey is produced in Brazil, but she can use most of it herself.

A great deal of bee-keeping is carried on in Chile, where it is estimated that a hive will yield on an average 50 lb. of honey annually. Over 1,000,000 lb. of purified wax and 5,000,000 lb. of honey are exported annually from Chile, of which Germany manages to secure 60 per cent. Aconcagua province, with its many flowers, is one of the best for producing it.

Cuba also produces a great deal of honey, most of which Germany also contrives to purchase. Wild honey is found in abundance throughout Mexico, especially in the forests of the Algarroba tree. Wild honey is also found in Nicaragua, and in other parts of America, Central and Southern. The black ant is the deadly enemy of nearly all American bees, the hives being often raised from the ground and set in water to prevent their attacks.—*Review of Reviews.*

Notices to Correspondents.

A. C. E. (Plumstead).—*Painting Hives.*—Yes, there is plenty of time to paint the hive, as swarms will not be issuing for at least six weeks. Use ordinary oil and lead paints, made either by yourself or the local carpenter. Ready-made paints are, as a rule, very unsatisfactory.

A. S. C. (Cornwall).—*The Standard Frame.*—The matter has been so thoroughly thrashed out in days gone by, the result being all in favour of the frame as used to-day, that it would serve no useful purpose to again open up a discussion in our pages.

E. M. A. N. (Wotton-under-Edge).—The secretary of the Gloucestershire B.K.A. is Mr. J. Hillman, Stonehouse, Glos.

Cymro (Cardigan).—*Bee-association.*—1. There is no county B.K.A. in Cardigan, and we are sorry we cannot give you the name of a bee-expert in your district. 2. The native bee does not work much upon red clover, except the second crop. Taking all things into consideration, it is the best bee for this country. 3. It will be most economical to purchase queens with such a small apiary.

R. Y. (Metheringham).—*Honey from Wax-extractor.*—If this has not been burned in the heating, it will be quite suitable for bee-food. Dilute it with warm water to the consistency of syrup.

B. B. (Wickwar).—*Transferring Bees from Skeps.*—1. You can transfer by placing skep on the top of frame-hive, as shown on page 150 of the "Guide Book," or, if you prefer, allow the bees to swarm and put the swarm on the old stand. If you can destroy the queen-cells, you can place the skep over excluder on the frame-hive with swarm, and remove it when all the brood has hatched out. 2. Any time now on a fine warm day. 3. Mouldy combs should be melted, as they are not fit for use.

T. E. G. (Ridgeway).—*Novice's Queries.*—1. Over-quilting is not objectionable in spring, but in summer, when you find bees ventilating the hive, you should remove some of the quilts, reducing even to one or two if the nights are very warm. 2. Stimulative feeding is profitable now even with the plants you mention, as they do not yield much (see page 109 of the "Guide Book"). 3. The bees which are not allowed to enter the hive are strangers, and belong to some other hive. If the wind sets in the direction of this hive, some of the bees may be driven from the other one towards it. This is not at all unusual in windy districts, and a good many bees are thus lost. We are glad to hear that you have found the "Guide Book" so useful, and hope you will be successful with your bees.

E. M. (Ireland).—*Races of Bees.*—One of the dead bees is a pure Carniolan; the other is a hybrid Carniolan and black.

Suspected Combs.

W. N. (Marton).—There is no disease in either of the combs, so far as we can judge. They contain nothing but honey, much of it candied. If the combs are melted down, the honey might be used for spring food for the bees.

A. H. G. (Hindhead).—The comb is quite dry and old, and contains no brood. It appears healthy. Add half its bulk of water to the honey for spring food.

A. L. (Hounslow).—The combs are too old to use, though apparently healthy. Melt them down for wax; it is the safest plan.

Editorial, Notices, &c.

TWO YEARS' CAMPAIGN AGAINST FOUL BROOD.

We have received the report for 1909 on the insurance scheme instituted by the Swiss Bee-keepers' Association for the purpose of waging war against foul brood, and, as it contains much instructive matter, we take this opportunity of bringing it to the notice of our readers, so that they may know what bee-keepers in a similar position to ourselves are doing to get rid of the pest.

Herr F. Leuenberger, chief of this department of the association's work, says that after the beneficial results obtained the first year it seemed as though they were on the right road to progress, and that their object—that of exterminating the disease—would soon be accomplished. Although this object has not yet been fully attained, they had made considerable advances, and the year 1909 will always be a memorable one in the annals of the association.

The season opened with a conference at the central headquarters of the association in Zug of the twenty-four cantonal foul-brood inspectors, who met for the purpose of stating their experiences and comparing notes. Dr. Burri, professor of bacteriology at the Federal Agricultural Institute in Bern, gave an address on brood diseases of bees, which he illustrated with the microscope. He has for some years made this branch his special study, and to him much credit is due for helping to clear up the confusion which existed respecting these diseases and for describing them correctly. Such a lesson and demonstration could not but be instructive to all those present, and would certainly help to familiarise them with the disease and make them understand it better. Much interest was evinced in the detailing of the different methods of curing the disease and the successes achieved. After the discussion it was resolved that in future anyone requiring the services of the inspector should first obtain a bacteriological diagnosis before calling him in. The cost of this would be allowed in the compensation if the case turned out really to be one of foul brood. It is evident that such a regulation will not only save the inspector useless visits in many cases, but will also oblige the bee-keeper to make himself better acquainted with the different phases of the disease. It was also decided that the compensation should be, for colonies of not less than 1 kilo of bees with their queen, in April 8 francs, in May 7 francs, in June 6 francs, and after that time 5 francs. It was further decided that the pamphlet describing the disease and methods of treatment should be widely circulated amongst bee-keepers generally.

There were 7,163 members of the association, who had 90,882 colonies, and the number of apiaries in which foul-brood cases existed remained about the same as in the previous year, namely 137, or 1.3 per cent. of the total. To obtain a fair idea of the distribution of the disease in the different cantons, the percentage number of cases in each has been tabulated, and we find that, although in many cantons it is under 1 per cent., in the south of Switzerland it rises to 12 per cent., while Tessin shows 16 per cent. and Grisons 9.2 per cent. In the 137 apiaries there were 1,585 colonies, of which 402 had foul brood. In thirteen of these apiaries the disease had been prevalent the year before, but the cases were fresh ones in colonies not previously treated, and it was evident that they were either already infected last year or the disease had been introduced through infected materials. In the swarms made from diseased colonies in 1908 the disease reappeared in four cases. It is supposed that in these cases the infection had been reintroduced, but it is recommended that in future more observations should be made to settle this point. It is, however, in any case not owing to a defect in the cure, but in not carrying out the disinfection recommended by the inspectors in an efficient manner. The two years' work has served to enlighten them on many points, and has been the means of exploding several common fallacies. The fact that in Southern Switzerland, just where the Italian bee is indigenous, foul brood is most extensively found throws a peculiar light on the statement in American papers, and that of some of the German ones, that bees of the Italian race are less subject to foul brood. The statistics have shown just the reverse. It is in the canton Tessin, where the Italian bee is exclusively cultivated, and whence queens are largely exported, that the highest percentage of cases was found, namely, 16 per cent. The American statement about the immunity of the Italian bee to foul brood receives an additional severe blow, for, as a matter of fact, the disease in canton Tessin is not only more extensive but also more virulent. As an example, it is stated that in the spring of 1909 foul brood was discovered in the apiary of a dealer. In July there were remaining only thirteen healthy colonies, thirty-six doubtful, and fifty-four diseased.

In Valais, where 12 per cent. of the colonies were diseased, Italian bees as well as those of the native race are cultivated, the latter being in the minority. The inspector reports that of the diseased

colonies four-fifths were Italians or hybrids, and that consequently the native race had resisted the disease much better.

Another American fallacy has been exploded—namely, that respecting the uselessness of the disinfection of hives. The Swiss inspectors have also carried out experiments, and they have proved just the contrary. An instance is given of an apiary of twenty colonies, the bees of which had died out, in the Bernese Oberland. The proprietor sold the hives to several bee-keepers in the neighbourhood, and in every case where they were used the disease broke out. The association had to thank this careless bee-keeper for nine cases of foul brood, which cost 250 francs to get rid of. The report therefore rightly lays great stress on the absolute necessity of thoroughly disinfecting every hive.

With regard to the financial part of the scheme, the insurance compulsory for all members of the association did not pay for the cost entailed, but that was not the primary object of it, which was at all cost to exterminate the disease. The Government, however, came to the assistance of the society and made up the deficit. So convinced was the Agricultural Department of the utility of the work, and realising the powerlessness of the society to enforce the examination of the colonies without police powers, that the Federal Government has now granted them such powers under the Contagious Diseases of Animals Act, so that it is hoped before long to rid the country of the scourge that has hindered the industry for so long.

LINCOLNSHIRE B.K.A.

ANNUAL MEETING.

There was a large attendance of bee-keepers from various parts of the county at the annual meeting of the Lincolnshire Bee-keepers' Association at the Co-operative Hall, Spalding, on March 19. Mr. G. Massey occupied the chair, and congratulated the association on the very representative gathering of members from all parts who were present.

The annual report and finance sheet for 1909 were presented. Therein it was stated that the year commenced with a balance in hand of £23 11s. 8d. The total receipts (including balance for 1908) amounted to £183 2s. 11d., and the expenditure to £166 9s., thus leaving a balance of £16 13s. 11d. to be carried forward. In addition to this balance there was due from the Lindsey County Council a sum of £15, which was not paid until after the accounts were audited. Thus the amount now in hand amounted to the satisfactory sum of £31 13s. 11d. The income included a £28 grant from the Lincolnshire Agricultural Show and a £10 grant from the Holland County Council. The past year ranked among the very worst, both with regard to the small amount of surplus honey stored and the quality of the same. Honey-dew was, unfortunately, very prevalent, and much of the honey-crop was spoilt by it. On account of the scarcity of honey fit for exhibition, several classes in shows in the county were abandoned. No complaints had been received, although nearly 80,000 official labels had been issued—a striking testimony to the excellence of Lincolnshire honey. Special mention was made of the county show to be held at Spalding this year, when it was stated that the management of the honey department had again been placed in the hands of the committee. It was proposed to hold the next examination for expert certificates at Spalding during the show.

The report and the financial statement, which were considered very satisfactory, were adopted.

The chairman paid an acknowledgment to the association for its generosity in offering prizes for competition at the Spalding Horticultural and other shows in the county.

The election of officers resulted as follows: President, Lord Willoughby de Eresby, M.P.; hon. secretary, Mr. J. H. Hadfield, Alford; hon. treasurer, Mr. H. C. Bentley, Lincoln and Lindsey Bank, Louth; hon. auditor, Mr. G. Booth Walker, Wainfleet; hon. librarian, Mr. B. Macleod, Heckington. The committee were re-elected *en bloc*, with the addition of Mr. W. J. Mouncy, of Spalding.

Mr. Hadfield, in returning thanks for his re-election, said the association boasted of over 700 members, and was the largest association of its kind in the country, but he could not do the work so satisfactorily if it were not for the support and help of the local secretaries.

Mr. H. K. Fisher paid a striking tribute to the late Mr. Richard Godson, who had carried on the secretarial duties of the association for nearly twenty years. From being in a very low way he had brought the society to its present very successful position. He proposed that a vote of condolence be sent to the surviving sister. His loss would long be felt by all members, to whom, by his courtesy, zeal, and splendid qualities, he had endeared himself.

Mr. Mouncy also spoke of the good work of the late secretary, and the vote was carried, all present standing.

After the meeting, a lantern lecture on bee-keeping was given by Mr. Fisher, of Ewerby.

It was decided to hold the next annual meeting at Grantham.—J. HADFIELD, Hon. Sec.

Obituary.

MR. EDWARD SAUNDERS.

Mr. Edward Saunders, F.R.S., passed away on February 6 at Bognor, having almost completed his sixty-second year. Although he never kept bees, he was the leading authority on the classification of the British wild bees, wasps, and ants, and he added greatly to our knowledge of the details of structure and colour by which the different species can be distinguished from one another, as well as of their distribution. No up-to-date collector of bees or wasps attempts to name his captures without the aid of Saunders's great work "The Hymenoptera-Aculeata of the British Isles," which was published in 1896. His "Wild Bees, Wasps, and Ants" appeared only about three years ago, and is a popular discourse, full of accurate information pleasantly given.

His studies were not confined to the Hymenoptera. His first reputation was made with the Beetles, in which Order he specialised on the Bupestridæ, his work on these, published in 1871, being now a classic. Later he attacked a third Order of insects, the Hemiptera-Heteroptera, popularly known as "bugs," and his well-known book on these was published in 1892. In 1890 he published in the *Journal* of the Linnean Society—of which he became a Fellow—"a most careful and interesting paper on the tongues of the bees, with beautiful illustrations drawn by his brother, Mr. G. S. Saunders, from microscopical preparations made by Mr. Enock." He was five times vice-president of the Entomological Society, and in 1902 was elected to a fellowship of the Royal Society, one of the highest distinctions conferred for scientific merit in this country.

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Mr. Saunders was the son of W. Wilson Saunders, who was also a naturalist of note and acquainted with most of the men of science of his day.

Since 1887 Mr. Saunders lived at Woking, and travelled daily to London, where he carried on an insurance business at Lloyd's in the Royal Exchange,

so that he had hardly any time for collecting insects except in the early mornings and during his short annual holiday, which was spent with his family, usually at some place on the South Coast, where he always succeeded in discovering rare and interesting specimens. Although his life was exceedingly busy, he found time to correspond freely with collectors all over the country, often writing his letters in the train, and to name the specimens they sent him for identification—a service which was highly appreciated and which gave him much pleasure, especially when, as occasionally happened, great rarities and even novelties turned up from unexpected places. No trouble seemed too great for him to take in helping and encouraging a beginner and smoothing out his difficulties. He was the essence of kindness and patience, and won the esteem of all who knew him. He leaves a widow and a large family; one of his sons succeeds him at Lloyd's.

His home-life was one of the happiest that the writer has been privileged to witness. "In the evening he was surrounded by his young family, and ready at a moment's notice to turn from his books and boxes to join in a game or conversation, or welcome a visitor, or discuss a domestic problem. He had no 'sanctum' and no 'close time' for study. It was really only by utilising all his odds and ends of time, by the perfect method of his arrangements—so that he knew exactly where to look for any book or other article which he wanted—and by his phenomenal power of concentrating attention on a subject or allowing it to be diverted for an interval exactly as he pleased, that he was able gradually to build up his materials for a book or paper of any length—brick by brick, as it were—until the whole was completed."

For much of the information given in this notice, and for the two quotations, the writer has drawn from the excellent memoir which appeared over the initial "M." in the March issue of the *Entomologist's Monthly Magazine*, a journal of which Edward Saunders was for many years an editor, and to which he was a frequent and valued contributor ever since its first appearance in 1864.

F. W. L. S.

AMONG THE BEES.

EMERGENCY SPRING FEEDING.

BY D. M. MACDONALD, BANFF.

The memory of last "black" season will linger long, and its effects will only begin to tell fully during this and next month. I would therefore advise beekeepers all over the country to take advantage of the first mild day to make a partial examination of every hive in the apiary. There should be no pulling asunder of the brood-body, and frames may remain quite undisturbed in the inspection I plead for. Simply peel off the under-quilt gently, and in most cases only partially, and note the seams of bees, the frames showing brood, and especially the amount of sealed stores. This last is the primary object of opening the hive; the others are only secondary. If your estimate shows stores equal to a drain of even a few weeks, close up all without any jarring or further disturbance. If, however, frames show dry and honeyless, as I fear a good percentage will, take timely steps immediately to right the wrong. Remember the strongest colonies will suffer most and quickest from any shortage of stores, because there are more mouths to feed, and presumably more brood to nourish and cherish. Candy may be given as emergency rations to tide over the few days or weeks which intervene before mild weather sets in, even semi-permanently. But do not trust too much or too long to this species of stores. At the earliest possible moment supply liquid food.

My favourite food in the opening days of April (in this locality) would be a full, fat comb of natural stores from any reserve supply, or from any overstocked hive which can afford the withdrawal of one frame. Simply scratch the face of this comb, which you place in the poorly-supplied hive next to the cluster. With the honey "bleeding" from the open cells, and the aroma scenting the air of the brood-nest, the bees will eagerly pass the life-giving food along to the extreme verge of the cluster, with little or no disturbance of the component parts. The little rake illustrated last spring (page 69, vol. xxxvii.) does the scratching effectively, but a knife run gently over the cell-cappings will serve as a substitute.

If it is desired to encourage rapid storing of the emergency food the frame can be scratched on both sides and laid over the tops of frames, allowing a free bee-way to every part of the lower face comb, and if deemed necessary to the upper surface also. The dripping honey, the larger area opened over the cluster, and the position of the supply do something to rouse the entire body of workers, and so in a very short time the supply will be consigned in and all around the brood-nest. If done on a fine day, therefore, there is really a minimum of agitation, at least as regards time, for the bees will very quickly settle down, and all excitement will subside, until before next day they will have again rearranged themselves in their oval ball.

With a fine day a variation of this plan may be better, as there is less commotion

in placing and withdrawing the comb. Supply it *below* the frames. The aroma of the honey from the open cells is a telephonic message to the entire body that a rich mine of wealth and health is all but placed at their very lips, and they eagerly take advantage of its tempting nearness, most expeditiously consigning it to the store cupboard. This plan is somewhat analogous to our forefathers' method of spring feeding, when they consigned the food to a soup-plate, covered it with short lengths of straw or rushes, and placed it on the floorboard. Two other systems of frame feeding may be appropriately given here. Fill an empty frame with syrup. It takes a little art to do this, because the cells are already full of air, and this has to be driven out before the syrup can be forced in. Hold it at an angle, and let the syrup flow from some height. Place the full side of the frame next the cluster, as advised for combs above, and the bees will quickly discover the life-giving sweet. A special frame-feeder is on the market, which allows of feeding in spring without much disturbance of the bees. It is an English adaptation of what is known as the "Doolittle" feeder. For early feeding its chief advantage is that it can be refilled without removing wrappings, and it is a saver of internal heat.

Dry sugar feeding is advised by some, and, rightly carried out, it should prove a success later on, but at this early period it would tempt the bees out too much in search of water to thin it down. Any liquid food should be given warm, and, if possible, it should be kept at least with the chill off to do most good.

Now take an extreme case of utter destitution when the spring examination takes place. Only drastic measures will be effective here, and in earlier issues the following has been recommended: Take the hive bodily into some room or outhouse where the temperature has been raised to a high degree. Place food in any of the above forms within reach of the bees. Leave the stock there to utilise it, when, as the temperature lowers, they will settle down and recluster loosely. Next morning replace the hive on its stand, and if the day is anything like mild they will take a cleansing flight. After, trust all will be well. This advice only holds good in extreme cases of utter exhaustion owing to an entire lack of stores placing the colony *in extremis*.

Feeders are listed by some supply dealers with accommodation for pollen as well as the apartment for syrup. This may work out all right in an emergency case where a colony may be suffering from a pollen famine. While bees are confined, however, the less bee-bread they consume the better.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7781.] The month of March went out with a cold wind, somewhat tempered by sunshine, not, however, warm enough to counteract the effects of the north-easter. The continued dry weather has provided a fine seed-time for the farmers, and a warm rain would now be welcomed, especially by the keepers of bees. We are not blessed just now with many flowers. The palm or withies are past, and the wint flower has not come into bloom yet. I have been giving artificial pollen, and shall continue to do so for a few more days till the dandelion comes into bloom. I would advise everyone to examine each stock, if not already attended to, to see the condition of the stores, and where there is a shortage give additional food at once—frames of honey, if on hand, or a supply of syrup (not too thick). If inconvenient to feed every day in small quantities, a 3-lb. jar may be given, and the bees will either take it as required or store it in the combs till wanted.

The old bogey of foul-brood legislation has come to the front again. While admitting that there is much to be said for legislation, I contend that there is something in the arguments against invoking the aid of the law to deal with this matter. Take swine fever, as an instance, and the results of the Act. The restrictions are so great that, although the disease has not been eradicated, the keeping of pigs, at least in this district, is practically a thing of the past. Then we have an illustration of a Foul Brood Act in Canada, and the high hopes which were raised on its introduction have been disappointed by many years of practice. The disease, I gather from the American bee-papers, is still rampant in the land, while inspectors have been increased tenfold. Then there is the straw skep, still in existence in this country; this, I contend, is practically a sealed book to the inspector. He may be able to see if the disease is in an advanced stage and the brood is near the bottoms of the combs, but if the brood is near the crown of the skep it will be impossible for the most lynx-eyed inspector to certify that the colony is diseased. Then another great objection to inspectors is the probability of carrying the germs of the disease to the healthy stocks they handle afterwards

on the same journey. No one would invite an inspector into his home to take refreshment if he knew that he had just before been overhauling a domicile infected with smallpox; and I myself should feel the same antipathy towards an inspector who had overhauled a foul-broody apiary and then visited my premises, interfering with my healthy stocks. Again, we are threatened with a disease far more fatal to bees than foul brood—viz., *Nosema apis*. In "Association News," in *Record* for April, I notice the hon. secretary of the Hartley Wintney Bee-keepers' Society gives an account of the effects of this scourge in that district, and adds: "I think there is little doubt that the infection can be carried in the clothing, because I was in Herefordshire last September and inspected two hives there, having taken no bee-appliances of any sort from Hampshire. Within ten days the familiar signs appeared, and both stocks died. As there were no bees within several miles, it is almost certain that I imported the disease." Here we have an authentic case of infection being carried many miles. I hope bee-keepers who do not believe that a Foul Brood Act would benefit bee-keeping generally will speak out. I feel sure the Editor, with his well-known love of truth and fairness, will allow both sides of the question full expression in the pages of the B.B.J.—W. Woodley, Beedon, Newbury.

WHY NOT?

BEE-ASSOCIATIONS AND HONEY DEPÔTS.

[7782.] Co-operation in the disposal of honey is a subject of great importance to bee-keepers, and one in which I have taken much interest and trouble. We have repeatedly started honey depôts for the members of our county association, and, though these have succeeded for a time only, we are still hopeful of getting permanent benefit in this way.

The difficulty we have always found is the bee-keeper who, like Mr. White (page 117, March 24), will not join a local association, although "several times asked." His waiting until the B.K.A. raises the price, while outsiders like himself make this impossible by accepting the ridiculous prices they do, reminds one of the boy who would not get into the water until he could swim. It is encouraging to hear of people like his friend who would rather give up bee-keeping than undersell others.

Another difficulty in the disposal of honey is the fact that there is not a general demand for it, as in the case of eggs, which Mr. White quotes. Honey has to be "pushed" and the public educated to make more regular use of it. Again, when some progress has been made, there comes a year of shortage, or of honey-dew, and much of the way made is lost. When, however, the great majority of bee-keepers are members of associations, which it is not unreasonable to hope for, co-operation will be more practicable, and fair prices for honey not so difficult to obtain.—John P. Phillips, Hon. Sec. Worcs. B.K.A.

DRIVEN BEES AT THE HEATHER.

[7783.] I have been hoping to see some response to the invitation to criticise the plan of your correspondent, "J. N., Portobello" (7744, February 17). The object in putting so large a lot as 8 lb. or 9 lb. of bees into a hive at the heather season is to get honey stored in the surplus-chambers, since it is proposed to provide forty-two 1-lb. sections for the bees to fill. Seven frames (the proposed number) in the brood-nest afford a maximum storage of 42 lb., and, making allowance for the activity of the queen and deducting 6 lb. for the two "full" combs, leaves storage room of about 30 lb. It is easy to imagine this large driven lot securing 72 lb. of heather-honey if the flow comes early, thus leaving no cause for inquiry about methods; but for practical purposes let it be agreed that the bees will get 50 lb. of heather-honey. I should in that case expect 30 lb. of sealed heather-honey in the brood-chamber, with the balance (20 lb.) sealed and unsealed in the surplus-chamber, *i.e.*, if worked on the suggested plan.

I cannot see the reason why so much room (five empty combs) is to be provided for the queen to lay. Assuming that the bees are received on August 12, if the flow begins immediately afterwards, the queen would be crowded out in a few days; and if the flow does not begin until the end of August the same adverse weather conditions that caused the scarcity of nectar would probably put a stop to breeding during the period prior to the flow. The details of the plan are similar to methods now practised at the moors, and show the bee-keeper modestly "holding his cap" for the surplus, if any. Placing the sections with worked-out combs above the rack of sections with full sheets shows optimism unwarranted by the experiences of bee-keepers generally. A few days of ordinary moorland conditions (wind north-west) would cause the bees to have a tendency to store in the brood-combs all the honey they got. It is better practice to place the combed sections next to the top bars as a counter-attraction to brood-chamber storage. In nearly all seasons 4-lb. or 5-lb. lots of driven bees placed on the moors in the way suggested would give little or no surplus. I have no experience of 8-lb. or 9-lb. lots, and if your correspondent carries out his experi-

ment it would be very interesting to hear how much honey the bees gathered and where they stored it. Bee-keepers in heather districts derive satisfaction from the thought that the brood-combs are well filled with heather-honey after the season is over, and they do not see anything wrong in the practice of wintering bees on honey that readily sells at 1s. 3d. to 2s. per lb. I would give driven lots nothing but well-stored brood-combs not less than three parts filled with clover-honey, if using the standard comb-hive, in order to compel the bees to store all or nearly all heather-honey in the super. Every pound of heather-honey stored in the brood-nest is a loss of at least 1s. to the bee-keeper, and knowing well how frequently bar-frame hives are brought back from the moors with brood-combs filled often to the bottom bars with this precious product, with nothing in the supers above, I can readily understand the complaint so often heard: "There is no profit in bees."—J. N. KIDD, Stocksfield-on-Tyne.

PROPOSED B.K.A. FOR ABERDEENSHIRE.

[7784.] In view of the interest taken in the discussion in recent numbers of the B.B.J. *re* the reorganisation of the British Bee-keepers' Association, I think it is a suitable time for bee-keepers in the county of Aberdeen to start an association.

I believe there are many who would be willing to join if once it were set going, and I think a large amount of good could be done by it, such as helping bee-keepers to get rid of the foul-brood pest, which is still too common in some parts of the county; then fixing a fair price for honey, and preventing a glut in the market when it is plentiful. No doubt other things would suggest themselves as time went on, but in the above instances there is much need for reform.

In my opinion, if bee-keepers would enter into the scheme with enthusiasm there would be little fear of the association not being a success; and now, when the season is just beginning, everyone is full of interest in the bees, and it might be started before the rush of work comes on.

As I find your pages are always open to further the interests of bee-keeping, I hope you will insert this letter, and if those who are favourably inclined towards the idea will write to me saying if they are willing to become members and get others to join also, we might arrange through your columns to have a preliminary meeting soon, either in Aberdeen, Dyce, or other suitable centre.—ALEC LOW, Swailend, Newmachar, Aberdeen.

[We hope Mr. Low will have a hearty response to his appeal for organisation among the bee-men of Aberdeenshire. Let them remember "Unity is strength," and mutual help makes many things possible.]

FOUL-BROOD LEGISLATION.

[7785.] Referring to Mr. T. J. Horsley's letter in your valued paper (7777, B.B.J., March 24) respecting the above subject, with your kind permission I should like to make a few remarks thereon from a somewhat opposite point of view. Has Mr. Horsley ever heard of the Swine Fever Act? I presume he has, and probably knows more about it than I do. But can he gainsay the fact that the Act I have just referred to has done a great deal of good in the country? Further, if that Act has been so beneficial, why should not a Foul Brood Act be equally good, if based on the same principles and worked in the same manner? It would most certainly make the county associations more powerful than they are at present, inasmuch as all bee-keepers would seek the cheapest expert advice they could get by paying a small annual subscription to a county association, and thus obtain the help of the county expert. The result would be that everyone who intended to do any bee-keeping worth the name would join his association, if only for the purpose of keeping clear of the police and the probability of having to face the magisterial bench, with the consequent loss of £ s. d. In addition to this, the members of our craft who have striven to become experts, and, up to now, have received no benefit therefrom outside their own apiaries, would probably be required to act as His Majesty's inspectors at times for the purpose of assisting the police—this at the expense of the Government. Then, again, many bee-keepers have a false impression. They think some bumptious Government official would pounce upon their apiaries when and where he chose. It stands to reason that the Government officials would have to be taken from the ranks of existing association experts, and we all know that they are anything but bumptious. To put the whole thing in a nutshell, the passing of a Foul Brood Act would establish the bee-keeping industry as a national asset, and give it the finest advertisement it could possibly have. The passing of such an Act would be practically acknowledging the great value of honey as a foodstuff. And, again, why should not the Government assist us as well as our friends who prefer to keep pigs? The man who keeps sheep or goats is taken under the Government's parental wing; why not the bee-keeper? Horses are protected from the cruelty of their drivers or keepers; why not also protect the much more indus-

trious bee from lazy proprietors? The wild bird is protected from erring humanity; and what a small amount of good a little bird does compared with bees! Only in the past few days I have been trying to strike a balance in this respect. The birds are clearing the insects off the fruit trees, while in a few days, given fine weather, the bees will be busy pollinating the blossom on the self-same trees. Is it not apparent that the bees will be doing just as much good as the finches and sparrows are to-day? If so, why not give them just as much protection? I am not by any means a veteran bee-keeper, so am not in a position to dilate on the condition of bees or hives when attacked by the malady. But, all the same, I fail to grasp the point of the letter I have referred to. Perhaps Mr. Horsley would not mind giving his reasons a little more fully, and if they seem good I shall be most pleased to back him.—J. J. L., Bere Alston.

THE "B.B.J." AS AN ADVERTISING MEDIUM.

[7786.] Of course, you and your advertisers are aware of the very wide circulation of the B.B.J., but I doubt whether readers generally realise how much the paper is read in the more distant parts of the world. In response to my advertisement in your columns I have lately had orders for plants and seed from California, New Zealand, South Africa, France, and many other countries. I am hoping to gather later the particulars of the usefulness of the plants in various climates, and if these are of sufficient interest will send them to you.—John P. Phillips, Spetchley, Worcester.

[We shall be pleased to hear the results of your notes on the usefulness of the plants in foreign climates; they will form an interesting addition to what has already appeared on the same subject.—Ed.]

WEATHER REPORT.

Westbourne, Sussex.
March, 1910.

Rainfall, 1·34 in.
Below average, ·79 in.
Heaviest fall, ·64 in. on 7th.
Rain fell on 9 days.
Sunshine, 134·4 hours.
Above average, 43 hours.
Brightest day, 29th, 10·8 hours.
Sunless days, 3.
Maximum temperature, 55° on 28th.
Minimum temperature, 28° on 14th.
Minimum on grass, 23° on 1st.
Frosty nights, 11.
Mean maximum, 49·3.
Mean minimum, 35·6.
Mean temperature, 42·4.
Above average, ·5.
Maximum barometer, 30·534 on 29th.
Minimum barometer, 29·754 on 8th.

L. B. Birkett.

MARCH RAINFALL.

Total fall, .80 in.
Below average, 2 in.
Heaviest fall in 24 hours, .21 in. on 1st.
Rain fell on 8 days.

W. Head, Brilley, Herefordshire.

Queries and Replies.

[4008.] *Mice Entering Hives.*—1. Would you be good enough to tell me in an early issue of your valuable paper the proper method to adopt when an apiary is visited by mice? Unfortunately, these pests entered one or two of my hives and destroyed some combs, but when I discovered the presence of the mice I removed the damaged combs and did not disturb the cluster. 2. Would I be right in giving the bees the frames as they are (they contain a good quantity of honey), or should the honey be extracted and the comb melted? 3. A neighbour was also troubled with these pests during the winter, which damaged the combs more than in my case, and he overhauled all the frames. Do you think this overhauling would have any effect on the queen or on the stock? I told him the bees might "ball" the queen, or they might take a violent attack of dysentery through being disturbed. Was I right? Your reply will be much esteemed.—W. F. I., Ballindalloch.

Reply.—1. Reduce the entrance in width, and the height of the opening should not exceed $\frac{3}{8}$ in. 2. It would be better to extract the honey and melt the combs, and allow the bees to build new ones on comb-foundation. 3. It depends on the time the overhauling was done, but untimely disturbance frequently leads to "balling," and also dysentery if bees are not able to fly freely to discharge their excrements.

[4009.] *Using Infected Hive.*—I should be glad if you would tell me in the B.B.J. whether it is quite safe to use a hive that had a slight attack of foul brood last April. I destroyed the bees, combs, and frames, and thoroughly scrubbed the hive out with strong soda and boiling water. Afterwards I brushed it all over with carbolic acid and water, and have since left it standing out in all weathers. Last week I painted it all over again (during the summer I had painted it afresh on the outside). I should like, if possible, to use the hive again now either for transferring bees out of a present hive or for a swarm, if I have one. Do you think it advisable to use it yet? In transferring bees, if I want to put the hive (for permanency) about a yard away from the bees' present home, can I do this in one move? How soon may bees

be put into a hive after it has been painted? I have painted the floorboard all over, and the hive still smells strongly, though it was done nearly a week ago and has been left open since. Hoping I am not troubling you too much, and thanking you in anticipation.—WARWICKSHIRE READER.

REPLY.—If we understand you aright, the hive has been painted inside as well as out, and it can be used again with safety. If not, then scorch it thoroughly, letting the flame pass over every part, and taking especial care with the joints and cracks in the inside. A hive should stand at least a fortnight after painting before being used for bees. Only one move is necessary for a yard.

[4010.] *Using Suspected Combs.*—I had an outbreak of foul brood last summer in my apiary of five stocks, but, being ignorant of bee-diseases, I did not know that anything was the matter, and consequently the shallow frames from three stocks (only one of which was affected) were put away together. When feeding up for the winter a neighbour of mine (an expert) inspected them, and told me that one stock was badly affected with foul brood. Acting on his advice, I smothered the few bees left, burnt the combs, and thoroughly disinfected the hive. The diseased stock had been supered with one box of shallow frames and two other stocks with two boxes each of the same. Now that they have got mixed the expert's advice is to melt them down or burn all the shallow frames and on no account use them again. Another old bee-man, who is not an expert, but who has had a life-long experience with bees, says it would be a great pity to destroy the combs, and that it is unnecessary, as if I put them into a big box and burn some sulphur the spores will be destroyed, and I can use them again with safety. I should like to save them, if possible, and should be glad of your opinion. Also would the sulphur fumes affect the flavour of honey subsequently stored in them?—W. H., Bristol.

REPLY.—It will be wise not to run any risk in using the combs, but melt them down and disinfect the boxes by scorching with a painter's blow-lamp. Burn the frames and start again with new ones and full sheets of foundation. The loss will be insignificant compared with the possibility of introducing disease into your healthy colonies by using the combs again. Sulphur is a good disinfectant, and formalin is a better, but neither will kill spores. Nothing short of burning or boiling for some time will do this. Sulphur will not affect the honey if the combs are exposed to the air after being fumigated.

TRADE CATALOGUE RECEIVED.

E. J. BURTT (*24, Stroud Road, Gloucester*) sends out a well-got-up twenty-page illustrated price-list of hives and appliances. Mr. Burtt makes a speciality of supplying bee-houses, and well-seasoned boards cut and planed by machinery to sizes ready to make up into bee-hives. Catalogue free by post.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

C. A. H. (Lenzie, N.B.).—*Heather Honey.*—This is not imported into this country. On the Continent heather honey is classed as an inferior product, and is only used for making gingerbread or in some of the manufactures.

C. G. (Welshpool).—*Planting Drive.*—Suitable evergreen shrubs would be box, *Rhamnus alaternus*, Escallonia, and laurels. Any of these can be cut back and grown to the height you require. For smaller shrubs you could use *Berberis aquifolium* and *B. Darwinii*, both good for bees. There are few evergreen trees growing to 25 ft. that are of any use to bees, except that they gather pollen from some of the conifers.

STAMFORD BRIDGE (York).—*Beeswax.*—Both samples of wax are good, and are suitable for making into foundation, either super or brood.

H. O. M. (Bristol).—*Moving Bees.*—It will be best to move the stocks at once.

F. V. W. (Gloucester).—*Bee-parasite.*—We cannot say definitely without seeing a specimen, but most probably the parasites are *Braula cœca*, or blind louse. They do no actual harm to the bees, but are objectionable and irritate them. Thanks for your suggestion, which shall have consideration.

G. D. (Glasgow).—*Stock Dying in Winter.*—The stock being a second swarm, and last season a bad one for bees, they did not work up into a strong enough colony to stand the winter, and dwindled away. It would have been best to have united them to another colony. You can use the combs stored with honey for food for other stocks.

X. (Eastbourne).—*Dead Bees.*—One of the bees showed signs of dysentery. All the

others must have been dead for some time, as they were dried up. They are probably bees that have died during the winter, and are being carried out of the hives now that the bees are cleaning up their dwellings.

S. H. R. (Surrey).—*Honey Sample.*—Honey contains very little pollen, that predominating being from *Prosopis julliflora*. There are also a few grains of pollen of leguminous type, and one or two which appear to be honeysuckle, but are ruptured, so that it is impossible to determine them with certainty. The honey is remarkable for the unusually small quantity of pollen it contains.

Bee (Lewes).—*Using Old Combs.*—It will be best to melt the combs down for wax. If you cut out the pollen, the bees will no doubt fill the gaps made with drone-comb.

River Lea (Cheshunt).—*Bees Building Comb in Candy-box.*—The procedure you suggest is quite correct; be careful to put the frame containing foundation on the outside of brood-nest. We are pleased to hear that the directions given in the "Guide Book" enabled you to move your bees successfully.

Suspected Combs.

C. H. P. (Dulwich).—*Loss of Stock from Starvation.*—The bees have evidently died from cold and starvation. One of the pieces of comb has been gnawed down to the midrib by mice, which shows that the colony must have been in a weak condition. There is no evidence of foul brood, but it will be better to melt down the combs for wax than to use them when starting afresh. They are old and dirty, and not suitable for putting into a healthy stock.

W. T. (Northants).—*Carbonate of Soda in Bee-food.*—The candy is not suitable for the bees, because if the sugar is still granulated it shows that it has been under-boiled. It can be made into syrup, and if diluted with an equal quantity of properly-made syrup, to lessen the proportion of carbonate of soda, it will do no harm to the bees. It is not too early for syrup-feeding now. The "Guide Book" has been completely re-written and over 100 new illustrations added since the edition you have was published, and you will find it advantageous to procure a copy of the latest edition.

D. R. (Coupar, Fife).—Comb is affected with foul brood.

H. J. W. (Plymouth).—Comb is affected with foul brood. It is not necessary to paint the upper side of floorboard, but the interior of the hive should be thoroughly scorched with a painter's blow-lamp before being used again.

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. WM. MCNALLY.

The subject of our notice was born on May 17, 1855, and with the exception of two years spent in Glasgow has resided all his lifetime in his native parish of Glenluce, Wigtownshire. Of a family of seven sons and one daughter, Mr. W. McNally is the third oldest. During the 'eighties the McNally brothers were well known as

MR. WM. MCNALLY.

formidable opponents on the show-bench. William, when leaving school at fifteen, was apprenticed to the trade of joiner and builder, and at twenty-two started on his own account, when by diligence he soon built up a thriving business. He also factors a very considerable property in the district, and is clerk to the Old-Age Pensions Committee. For a number of years he was a member of the Parish Council.

Mr. McNally is best known as an extensive bee-keeper, however, for the last thirty years, having been first attracted to this industry in 1876, when he and his brother John, a lad of fourteen years, set out to bring home their first swarm in a skep, tied up in a sheet and suspended from a stout stick between them, and which they carried home a distance of four miles. The disastrous honey-year of 1879 found him with six hives, but these in 1880 dwindled down to two stocks to begin the season. From this small beginning the apiary rapidly grew until, in 1887, he owned 153 hives. During these years he exhibited extensively, and, besides numerous other prizes, he carried off five years in succession the silver medal offered by the Highland and Agricultural Society of Scotland, at the old "Caledonian" Show, for the best and largest display of honey and honey-comb.

Pressure of work since 1890 has prevented him from engaging in honey competitions, and his time is now largely taken up with judging at shows. His apiaries—for he believes in working a few out-apiaries at convenient centres from the home apiary—number about 130 stocks during summer, and he winters from 100 to 110. Mr. McNally's ambition has been to run 200 stocks, but from various causes, chiefly want of room, he has never been able to reach this number. As he has recently acquired additional ground,

his aspirations may yet be fulfilled. He has found his trade of use to him, as he has been able to make most of the appliances he required for use. All the most up-to-date methods of running a large apiary profitably have been adopted by him, so that large quantities of honey and wax can be handled and prepared for market with the least possible working expense, on similar lines to those bee-men in America and elsewhere who count their stocks by the hundreds. He always finds a ready market for his honey crop. One season he took three tons of honey from his own apiary, and had the whole disposed of by the middle of October of the same year. For a number of years his contributed articles have appeared regularly in the *Bee-keepers' Record*, and the practical and sound advice contained in them is much appreciated by readers.

Some eight years ago he took up fruit-growing, and has already built up a large local trade in this business. His fruit commands a much better price than that quoted in wholesale districts, for he finds that customers prefer to pay more for freshly-gathered fruit than for that brought from a distance or from doubtful sources of cleanliness. Bees and fruit, though both begun by him as a hobby, have now developed into a large part of his business, all of which tends to show what can be accomplished by patience and perseverance.

Mr. McNally's extensive bee-keeping experience has brought him into touch with all the prominent bee-keepers of the last thirty years, and he admits that if he had to live his life over again there would be a considerable blank without the bees.

WARWICKSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of this association was held on April 7 at the Grand Hotel, Colmore Row, Birmingham, Major Deakin presiding.

The annual report stated that there had been a large increase of members, notwithstanding a very poor, wet season. The accounts showed the income for the year amounted to £125 14s. 7d. and the expenditure to £139 6s. 9d., leaving a deficiency on the year's working of £13 12s. 2d. The report of the experts —Messrs. G. and E. Franklin—on the spring tour of 1909 stated that fruit blossom being abundant and the weather very fine, the bees made rapid progress. By the middle of May swarming was very general, and by the end of the month supers were filling rapidly. June set in wet and cold, and for a week work in the apiary was at a standstill. Foul brood was discovered in twenty-two apiaries. Reporting on the autumn tour, the experts said it was carried out under the most trying conditions experienced in fifteen years. Early in the course of inspection they found breeding had ceased. Bees generally were short of stores, and much feeding became necessary. To chronicle a third successive bad season was very unpleasant, but 1909 must rank as the worst of the three. Both the yield of honey and the quality were most disappointing. Honey-dew was prevalent, and most of the honey was of a dark colour. In spite of bad seasons, however, it was pleasant to note the increasing interest taken in bees.

Moving the adoption of the report and statement of accounts, Major Deakin pointed out that the association started thirty years ago, and now had a membership of 500. We imported into this country every year about £60,000 worth of honey. That was not the place to talk about Tariff Reform. Still, if a small duty were placed on imported honey the output of this country would be larger, and there would be an increase in the number of bee-keepers. The motion was seconded and agreed to. Mr. R. S. Walters moved the re-election of the Marquis of Hertford as president, and the vice-presidents, with the exception of Lady Leigh, deceased; and a vote of thanks was passed to them for their patronage and support of the association. The committee and officers were re-elected. A resolution was passed affirming that the association was unanimously in favour of foul-brood legislation, and requesting the Council of the British Bee-keepers' Association to urge the Board of Agriculture to introduce such legislation.

A lecture on "Difficulties in Bee-keeping, and How to Overcome Them" was then given by Mr. W. Herrod, secretary to the British Bee-keepers' Association. The lecture was illustrated by a number of interesting lantern pictures. —(*Communicated.*)

Correspondence.

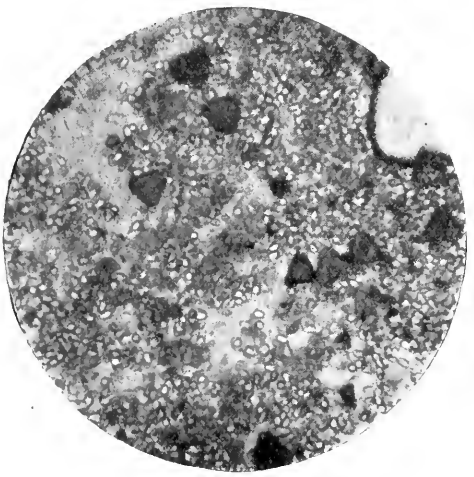
The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOSEMA APIS IN AUSTRALIA.

[7787.] My statement at Weisenfels that I thought that the bee-disease *Nosema apis* would be found to be of world-wide prevalence has very soon been found to be correct. I recently received

from Mr. W. Percy Wilkinson (Commonwealth Analyst in the Department of Trade and Customs), Melbourne, the following important information: "In the investigation of a disease which has this year broken out virulently in Australia, and which has caused much havoc in many districts of Victoria, the microscope has revealed organisms which in every respect resembled your Nosema spores which you described in the *Münchener Bienenzeitung* for September, 1909. As I wish to have my findings confirmed by you, I am sending you two flasks containing bees which have succumbed to Nosema."

These bees reached me a few days later, and I at once made an examination of them. As a matter of fact, closer investigation showed that all the bees were virulently infected with Nosema, as seen



NOSEMA APIS IN AUSTRALIA.

in the photograph. The abdomen in some of the bees was much swollen owing to the lower intestine being filled with excreta of a light colour and watery nature, while this characteristic was absent in some of the others. The connection between the presence of the large masses of the parasite in the intestine and the mortality of the bees has also been demonstrated in Australia by experiment. According to what Mr. Wilkinson wrote me, healthy bees, fed on food infected with material containing Nosema, died in from two to six days. The devastation which the parasite has caused in the infected districts appears to be very extensive. In the BRITISH BEE JOURNAL for February 24, page 80, it is mentioned that in one case out of 1,783 colonies no fewer than 996 have been destroyed by this Nosema disease.—DR. E. ZANDER, Erlangen.

FOUL-BROOD LEGISLATION.

[7788.] In "Notes by the Way" (page 137 in the issue for April 7) Mr. Woodley gives the legislation question a large share of attention. After reading his article I laid down my JOURNAL with a sigh of relief to think that Mr. Woodley was almost persuaded to be a legislationist at last. I note his words are quite clear on this, as he writes that he admits that there is *much* to be said for legislation, while there is only an indefinite *something* in the arguments against invoking the aid of the law. Mr. Woodley's opinions must always command respect from readers of the JOURNAL, but that he honestly holds the opinion that evil and not good would result from the passing of a Foul Brood Bill most readers will be slow to believe. The article under notice clearly indicates that he is in sympathy with many of the views held by those who desire legislation, yet clings to some prejudice which impels him to put forward a few feeble arguments against compulsory suppression of foul brood.

The result of swine-fever restrictions is given, and it is alleged against the Act that the disease has not been eradicated, while the keeping of pigs has almost become a thing of the past. One answer to this is that the restrictions are not to blame for the decline in the keeping of pigs, but the disease which made the restrictions necessary. Can Mr. Woodley or anyone else who uses such arguments give us any convincing evidence that the state of things would not have been a disgrace to any farming community if the Board of Agriculture had not in their wisdom stepped in and restricted the (in too many cases) ignorant and almost wilful propagation of a loathsome disease amongst animals?

Then take the illustration of the Foul Brood Act in Canada. What were the high hopes which were raised on its introduction, and which, according to Mr. Woodley, have been disappointed by many years of practice? We do not deny that there is plenty of foul brood in Canada, and will be for some time yet, in spite of inspectors, but after the many years of practice can any fair-minded critic deny that the passing of the Act there has been abundantly justified by the results; or can we accurately picture what the state of things would have been in Canada at the present time, if the thousands of cases treated by the inspectors had been left alone as hotbeds where foul brood would be propagated and its germs wafted broadcast in unrestricted freedom over the land? Smallpox and other diseases amongst the human race, glanders, pleuro-pneumonia, sheep-scab, rabies, swine-fever, &c., amongst animals, all still

exist, but is that any argument against restrictions which have proved beneficial in every case in reducing the number of outbreaks, and in the case of some diseases mentioned have been the means of almost stamping them out?

The skep—still in existence in this country—Mr. Woodley cites as a stumbling-block to successful inspection. This argument might easily be put aside as too feeble to need comment, and, while we admit there are difficulties in the way of examining a skep not present in the case of a bar-frame hive, no expert or inspector should be considered worthy of the position if unable by a little common sense and ingenuity to certify whether a skep is healthy or diseased. Skeps in the hands of a novice, especially in an infected district, are dangerous as domiciles for bees. Happily, like the anti-foul-brood legislationist, they are in a hopeless and insignificant minority in counties where up-to-date methods have been extensively taught. Every bee-keeper has a perfect right to keep his bees in whatever suits his fancy, so long as he keeps them clean and free from disease likely to hurt his neighbours' bees. The difficulty in examining their interior should not, and I feel convinced never will, be admitted insurmountable by any competent expert. Mr. Woodley gives next as a great objection to inspectors the *probability* of their carrying the germs of disease to healthy stocks they handle afterwards on the same journey. If smallpox came to Mr. Woodley's native place, would he, as a guardian and district councillor, object to the inspector visiting the infected domicile for the purpose of compulsory disinfection because of the chance of someone being foolish enough to invite him into his home before he had taken reasonable precautions to rid his person of infection? Is it not a stretch of the imagination to suggest that anyone occupying such a post as inspector would be so ignorant and careless of his duty as to accept in such circumstances an invitation of this kind? Again, we might ask, are bee-keepers, and especially certified experts, not as cleanly in their habits as doctors and others who have to go from a germ-laden atmosphere to a healthy home? Mr. Woodley in this argument shows his belief in the terribly contagious nature of the disease, and I feel sure if it broke out anywhere near his apiary he would accept the risk and go himself to eradicate it, or send some equally reliable substitute to undertake the task. His fear of the risk of infection by the person would be less than the fear of infection carried by the bees themselves. An elaborate system of inspection has been carried on in Cumberland with great success, which is shown by the reduction of cases of disease from 50 per cent. or more in some districts, to 7 per cent. for the whole county. Can anyone dispute that if we had compulsory power of inspection the result would be more satisfactory still? Does this show any support to the argument that experts spread the disease? That the opinion of the majority of the bee-keepers in the county and adjoining districts has been favourably influenced by the work of experts is abundantly proved by the large majority in favour of legislation. The Editor can bear me out in this.

Mr. Woodley's reference to *Nosema apis* is another strong argument in favour of legislation. Here is an authentic case of a person actually handling stocks of bees known to be diseased, who then, without any precautions as to disinfection, travelled into another county, and actually introduced the disease into healthy hives, with the dire results stated. Can any evidence be stronger in support of some restraint being put upon such loss through wholesale spreading of infectious disease? In conclusion, may I re-echo Mr. Woodley's desire for fair play for both sides of the question? The time has come for action, and if part of the battle is to be fought in the pages of the JOURNAL, I am sure the Editor will act impartially in the matter. Let us have fresh evidence, if any, and let all bee-keepers who favour the stamping-out of foul brood support the movement to secure legislation.—G. W. AVERY, Heads Nook.

[7789.] As I have been rather severely criticised in the B.B.J. by several writers, I should like to say a word in reply, my chief object being to offer an alternative to a Foul Brood Bill.

It seems incredible that correspondents in favour of foul-brood legislation persist in quoting the Swine Fever Act, when at the present time pig-keepers are praying to be relieved of that intolerable burden. Only last week a strongly-worded petition was sent to the Government asking for its abolition or amendment before it utterly destroyed the pig-raising industry in this country. Bee-keepers are now asking for legislation.

What a reward for those who have given their time, their energies, and their talents for years for the benefit of bee-keepers! What a eulogium on thirty years' circulation of the B.B.J.! What a consolation to those who have helped to make that journal what it is to-day! What a pleasure to those who have employed their eloquence in lectures and those who have given financial help now to be told that British bee-keepers are

unfit to be entrusted with the care of bees! Mr. Smallwood attempts to unite science with oppressive law. It is the reverse, for barbarians in all ages have used legal restraint as a substitute for science. A mania has set in for legislating upon every insignificant trifle. Man never reaches the height of his folly until he makes laws for himself, when he becomes himself a more complete slave than the world's greatest tyrant would ever have thought of making him. This craze for excessive legislation has reached bee-keepers, and man's most fascinating hobby is to be invaded, and probably destroyed. What is the alternative? Instead of the police, I would give county associations something of a practical and useful nature to do. If there is one thing these associations ought to do, it is to keep their respective areas free from foul brood. Associations being spread all over the country, if each one kept its own area clean where could foul brood exist? For evidence showing what county associations could do, let me refer readers to page 86, where Mr. Avery, innocently enough, destroys all his arguments in favour of legislation by stating that the Cumberland B.K.A. reduced foul brood from 60 per cent. to 7 per cent., and did this without law, police, or magistrate.—A. Green, Notts.

[There would probably have been no pigs left in this country had the Swine Fever Act not been passed in time to prevent their extermination. The associations are doing their best and can get at most of their own members, but they have no power to inspect or deal with the bees of the ignorant and obstinate or those who are not members, and who constitute the real danger. Legislation is not asked for with a view to oppression, and is only needed to deal with those who will not act as they should without it. No reduction of foul brood is any use if a neighbour keeps diseased colonies in his yard, and so spreads the disease. In this way the work of the associations is nullified.—Ed.]

[7790.] Being a regular reader of "Notes by the Way," in which one generally finds much sound advice and many useful hints, I was as delighted as surprised —(7781) *re* foul-brood legislation—to read the clause "while admitting that there is much to be said for legislation" coming from the pen of Mr. Woodley. He certainly went on to "contend that there is something in the arguments against invoking the aid of the law to deal with this matter," but that he admits anything at all in favour is a decided change from his attitude during the controversy in 1904.

The most ardent advocate for an Act does not deny the many difficulties that lie in the way of eradicating the disease, and Mr. Woodley goes on to point out one of them, but I quite fail to see that he has made a point against an Act. In fact, it is the other way about. He says: "We are threatened with a disease far more fatal to bees than foul brood—viz., *Nosema apis*." Quite true, unfortunately, but, I take it, all the more reason that there should be an Act to deal with *all* diseases.

Sanitary authorities have power to deal with cases of smallpox, they exercise greater powers should there be an epidemic, while yet further authority is vested in them should bubonic plague, spotted fever, or any other terrible visitation be threatened. To take care of our bees and protect bee-keepers we should have an Act giving power in the same way. In simple cases, only what is needful would be done, but drastic powers should be invoked in severe cases, and always in suspected cases of *Nosema apis*, which to foul brood is as the plague compared to smallpox.—F. Sitwell, Yearle House, Wooler.

[7791.] I have read with great interest the letters in the B.B.J. on foul brood and legislation, and should like to give a few experiences of my own regarding this important question.

I have been a bee-keeper for over thirty years, and hundreds of stocks have passed through my hands. I have also driven bees for friends for miles around my home, and in my opinion foul brood does not exist among skeppists. Every year the old skeps are destroyed, and only the swarms retained.

Why not try gentler means instead of forcing an entrance into a bee-keeper's garden (which will be the case if the Foul Brood Bill becomes law)? For instance, where there is only one member of an association in a village, and the expert pays him a visit, he might make a friendly call on any other bee-keeper in the place, give him a little advice, and explain how to deal with a disease such as foul brood, should he ever have it, and incidentally point out the benefit he would derive by joining the association.

I am the largest bee-keeper in this district, and depend almost solely on my bees for a living. It is therefore not likely that I should oppose any measure that would protect my interests. No one knows the exact state of the apiary so well as the bee-keeper himself. Many bee-keepers besides myself to my knowledge believe that the measure will not find acceptance among the majority of bee-keepers, and I hope that this matter will be thoroughly discussed.—Flos, near Salisbury.

THE COMING OF SPRING.

The bee buzzed up in the heat,
"I am faint for your honey, my sweet."
The flower said, "Take it, my dear,
For now is the spring of the year,
So come, come."
Hum, hum.
And the bee buzzed down from the heat.

[7792.] If Tennyson had written the above this Anno Domini 1910, instead of many years ago, how admirably it would have described the present almost perfect weather. Frosty nights, just the last touch of

Winter lingering in the lap of spring,

are followed by warm, sunshiny days, so mild and so gentle. Crocus, arabis, and catkin, all are waiting, listening for the music of the bee. Here she comes, singing and bright, just awakened fresh from her long winter sleep. Head thrust into blossom, and blossom lovingly embracing bee, each to each whispers the joyful tale of the bright summer days now coming:

Merrily, merrily, shall I live now,
Under the blossom that hangs on the bough.
Ariel's Song, "Tempest."

But all seasons are beautiful. There is poetry equally in the grey mist of winter or in the golden sheen of autumn. Yet *we* look forward more to spring than to her sister seasons. It is the maidenhood of the year. In the dark and dull December we parted with the Old Year, hoary and aged. Even then we cast a fervent thought into the future, but now "the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in the land. . . . Arise, my love, my fair one, and come away." Always, when I hear the soft coo-oo in the high tree-tops, do these beautiful words of the Song of Solomon occur to me, and as I watch the grip of winter relax, the sun mount higher and higher, and the snows melt, again comes into my memory as a note of music, "The flowers appear on the earth. . . . Arise, my love, my fair one, and come away."

As I walk in the garden I note the bees come to the upturned soil in search of moisture, and where I have placed water, and at the pond-side where the trailing grasses give foothold to the bees, I hear their sweet hum, and I know that inside the hive the nursing bees are busy. Carefully I lift the quilt, and am gladdened. Well spread over the frames are those beautiful cinnamon-brown patches, the regularity and clean capping of which tell me that all is healthy. Oh, but it is a sight to see, the perfect frame solid on both sides with capped cells, and to know that in each of those little hexagons an insect is gradually transforming from the grub-like larva to the winged thing of beauty now buzzing around:

When spring unlocks the flowers, to paint the laughing soil,
The good wife ope'd the window wide,
The good man spanned the plough.
'Tis time to run, 'tis time to ride,
The spring is with us now.—LELAND.

And the good apiarian too—his busy time has come. The floorboards must be cleared of the accumulated débris of the winter, and there are a thousand and one preparations to make for possible increase. Even now thought must be given as to building up stocks for the harvest. Everything should be made ready in advance. But why, in a letter written to amuse, should I trespass on the "Guide Book"? All can be found there. I have only one point to make. The harvest may be great, but if the labourers are few they cannot gather it in. Therefore, by wise stimulation (not too rapidly at first), gather together your hosts. I think it was Napoleon who said: "The God of Battles always fights on the side of the big battalions," and this is very true of bee-keeping also.

Flesh as Food for Bees (7760, March 10).—May I mention another ancient writer, Pliny, who refers to this? I do not give the extract that follows *in extenso*—it would be too long. It occurs in his twenty-first book: "When bees are short of food it is convenient to place dried grapes or figs at the entrances, also drawn-out wool mixed with grape-juice or honey and wine, also the raw flesh of hens." Have we quite ceased giving intoxicating liquor to bees? On my expert tours I have heard of bees fed during the winter on sugar and beer, and I believe my own grandfather adopted this plan. Flesh of hens to eat and wine to drink. Not such a bad menu, is it? And grapes and figs as dessert.—J. SMALLWOOD, Hendon.

WIRING FRAMES.

[7793.] As bee-keepers will shortly be busy with wiring frames for foundation may I be allowed to explain the method adopted by myself with great success? It is found in practice that a wire pulled up tight in the frame will soon become loose on account of the wire cutting the frames where the holes are pierced. To overcome this difficulty I take the sides of the frames, and pierce, with a stout bradawl, a hole at about 1 in. from each end, and drive in a brass eyelet as used by bootmakers. The operation takes but a few seconds, and makes a neat job at little expense.—A. WAKERELL, Croydon.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of March, 1910, was £3,975.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Weight of Bees (page 93).—If a swarm of 2 kilogrammes carries 600 grammes of honey, or 30 per cent. of the total, this would represent the maximum of wastage in travel. In other words, a 5-lb. swarm might weigh 3½ lb. on arrival! If such a reduction ever took place, there would almost certainly be evidence, of previous repletion, in the shape of a fair-sized piece of new comb, containing honey in reasonable inverse proportion to the length of the journey. Driven bees are never, I think, despatched in such gorged condition, and 10 per cent. depreciation would seem to be a reasonable maximum.

A Taper Frame (page 100).—The main advantage is principally appurtenant to the first frame removed. Afterwards there is space to show a square frame across, and to remove it in the extra room of the diagonal. The use of a dummy is for the very purpose of providing this space, as far more damage can be done between comb-faces than against the hive-side. But the disadvantages of a taper-frame outweigh its advantages, and indeed the possibilities of finding the queen outside the end-bar of the outside honey-comb must be very remote. When inserting the final frame without spare room advantage may be taken of the hive-side to slide the end-bar adown it. This gives increased steadiness, and double bee-way at the other end-bar.

Wiring Frames (page 106).—If two wires are satisfactory, why not four, and keep the corners on the sheets? I think with Mr. Harris that No. 60 wire is too light. I sometimes break this, for I string it up quite taut, until it sinks deeply into the end-bars. But four wires will not break with the weight of a comb, and I cannot believe that they sag if they are originally as tight as they should be.

Bottom-bars (page 106).—If the ⅞-in. bar will sag, why not the ⅜-in. bar? Probably this is thicker, perhaps square, but Mr. Harris does not give its thickness. The cause of its sagging is probably the "duleimer tight" wires which he uses.

Is Clipping Cruel? (page 109).—A. E. Boulton does not give grounds for the faith that is in him in this matter, and it is difficult to see wherein the cruelty lies. Is his contention based on a supposition that the so-called nervures are organs of sensation, or is it that the cruelty lies in fright? For my part, if I had a hen which would fly across the river to lay, I should, whether cruel or kind, clip it to save it from a worse fate. Indeed, if necessary, every bird should be so treated, save only the little white hen that never lays away. The cruelty to a queen is at least of short duration; but has Mr. Boulton ever considered the cruelty of Nature, which slowly, slowly clips the wings of a worker, until it is unable to reach the hive with its last uselessly-gathered load of toilfully-won nectar?

The Fable of the Frogs (page 115).—It is a shame to spoil a good story, and Mr. Avery must forgive me for weighing it in the balances. But, like the darkey and the story of Jonah, "I kain' belieb' dat fish story." Now, would a frog drown or wouldn't he calmly go to sleep rocked in the cradle of the deep? Anyhow, they have covers to the cans on that road, for I have seen them! Dear me, it is a materialistic world, my brothers, but perhaps the frogs were put in with the water during the blending process.

A Miller's White Hat (page 115).—The good doctor doffs it very courteously to his two critics, but apparently it is only so that he may bonnet them. Fee, fi, fo, fum, he seems to say, as he gaily places our good friend "D. M. M." with Mr. Soal between the upper and the nether stones. Evidently an endeavour to extract some Scotch spirit from the combination in the press!

The B.B.K.A. (page 116).—Mr. Penny's contribution is a good one. What is wanted is not criticism alone, but a sound constructive policy. After all, it is so easy to criticise. I myself am never guilty, but I have occasionally thought that there was danger lest others might be tempted.

Good Resolutions (page 118).—Shake hands, brother Canadian, for we too have made most of those mistakes, and have resolved never—no, never—to do it again. The best-laid schemes of men (through mice) gang aft agley. But don't sulphur those combs (No. 7); try bisulphide of carbon.

Fumigating Combs (page 123).—I often see references such as this one in the *Practischer Wegweiser*, advising fumigation with brimstone as a means of destroying wax-moth. I have never obtained any satisfaction with the method. I have burned brimstone until the sulphurous vapour has blanketed the windows, and fought its throat-catching way through the chinks of the carefully-plugged door, until the locks and catches and any other

overlooked ironwork have been deeply coated with rust, and until the house itself has conjured up memories of the inhospitality meted out to departing measle microbes. But when I have gone, with mask and stiletto and cloak, to gloat over the bodies of my victims, I have found them, disinfected perhaps, but otherwise little the worse. Digging up their silken tunnels, I have found the surprised larvæ doing their usual express journeys, travelling at will, head-light or tender foremost. I have swung the censer of formalin under their nostrils, until in their tantalised and incensed state they must have called down curses on the shade of some maternal ant. And I have found nothing so satisfactory as bisulphide of carbon, which gets right home to them where they live, and move, and cease to have their being.

NOVELTIES FOR 1910.

WATTS'S PATENT "SIMPLEX" QUEEN-CAGE.

This new queen-cage was shown by the inventor, Mr. F. W. Watts, at the

B.B.K.A. Conversazione in October last, and is described by him as follows: "Its construction is quite simple. There is a lower compartment, with a movable glass lid, which ensures the safety of the captive insect. Not only is all danger obviated by the use of the 'Simplex,' but the operation of moving the queen is rendered quite easy and simple, although carried out by the use of one hand only. The lower portion of the cage is first pressed into the comb, after which it requires no further handling. The lid is then held in the palm of the hand, thus leaving the fingers quite free to take up the queen and place her in the opening of the cage, already fixed. The lid is then put in position, effectually securing the bee, whose movements can be plainly observed through the glass. Another advantage of the cage is that the bee-keeper is able to attach it to a piece of spare honey-comb, catch a few bees, and take them indoors for minute examination, which, by the aid of a magnifying glass, would make the insects appear very large and easy to inspect. It may also be used for various other observations, such as upon wasps and the humble-bees." The price of this useful appliance is only 1s.

Echoes from the Hives.

The bright weather at Easter gave me the opportunity of changing my stocks to clean hives, and in my experience I do not recollect ever having had my bees in such an advanced state for the time of the year, the colonies having come through in first-class condition, all having nice patches of brood, so that with careful attention I should secure sections from early fruit blossom, of which there is plenty each spring near my apiary. There is a certain amount of foul brood in this district, and local bee-keepers should watch their stocks most carefully for any signs of it, and if found at once take the necessary steps for a cure. I took an average of 50 lb., extracted and sections, from my hives last season.—V. E. S., North Finchley, N.

WEATHER REPORT.

BARNWOOD, GLOUCESTER.

March, 1910.

Rainfall, ·65 in.	Coldest night, 29th, 24.
Below average, ·79 in.	Number of nights with frost in the air, 14; on the grass, 25.
Heaviest fall, ·21 on 9th.	Relative humidity, or percentage of moisture in the air, 72%.
Rain fell on 9 days.	Percentage of cloud, 51.
Mean maximum temperature, 51·3; 3·3 above average.	Percentage of wind, 17.
Mean minimum temperature, 32·4; 4·6 below average.	
Warmest day, 30th, 58·7.	

F. H. FOWLER (F.R.Met.Soc.).

Queries and Replies.

[4011.] *Position of Frames in Hive.*—1. I am enclosing three bees, and should be obliged if you would tell me what variety they are. 2. I am a beginner, having bought a stock last October, and, having caught the bee-fever, I intend to extend my holding, and therefore propose to make another hive. I have a copy of the "Note-book" containing instructions for making a hive, but should be glad of advice on the relative advantages or otherwise of having the frames hung (*a*) parallel with the entrance, or (*b*) from back to front. I notice every illustration shows them running from back to front, whilst my hive is made with the frames parallel with entrance. It has occurred to me that the latter plan makes it more easy to handle the frames when working at the back of

the hive, and it is also more simple to make as regards double sides. 3. My hive will hold as many as fourteen frames. Would it be any advantage to fill it with so many? I shall be glad of replies to my queries through the B.B.J.—R. R. B., Brentford.

REPLY.—1. The bees enclosed are Italians. 2. If you construct a "W. B. C." hive, as shown in "Note-book," you can have the frames either parallel or at right angles to entrance, as you desire; it is really immaterial which way, as the advantages and disadvantages of the two positions about balance. Most of the appliance manufacturers make the frames at right angles. 3. All things considered and in the majority of districts, ten frames are enough. You can confine the bees on to this number in the brood-chamber by means of the division-board. The empty space behind will give you ample room for manipulating.

Notices to Correspondents.

S. M. (Surbiton).—*Hop-clover.*—This is *Medicago lupulina*, sometimes called hop-trefoil. It is an excellent plant for bees, quite equal to white clover in yield. It is grown on chalk soils, and yields an abundance of light-coloured honey.

J. Mc. (Glencoe).—*Allowing Bees to Swarm Naturally.*—Unless you are going in for queen-rearing you need not trouble about giving your hives drone-combs, as there are sure to be plenty of drones flying by the time your bees swarm. Your neighbour's drones would be quite within reach of your apiary even if you had none yourself, which is improbable, as bees generally rear drone-brood preparatory to swarming.

ESSEX CALF (Romford).—*Novice's Queries.*—1. Take out the first comb, which will give room for removing the uneven one. Then brush off any bees that may be adhering to it, cut the comb down to the level of the frames, and replace it. 2. Empty comb or foundation should not be placed in the middle of the brood, but next to it on either side, after pushing back the division-boards. It can be given when required and as the cluster grows. 3. You can tell when a hive has swarmed by the diminution of the population and by examining the combs. 4. The frames must be spaced 1⅜ in. from centre to centre during the working season. 5. Artificial swarming is not risky if the instructions in "Guide Book" are strictly followed.

L. C. M. (Tulse Hill).—*Barbados Brown Sugar.*—1. Syrup made from this can be used as spring food. If you are not certain that you have added naphthol beta you had better leave it out, as a double dose would make the syrup objectionable to the bees. 2. The secretary of the Surrey B.K.A. is Mr. F. B. White, Marden House, Redhill, but as you are living practically in London you might join the B.B.K.A. 3. Yes, a good many of the plants now flowering secrete nectar.

E. A. B. (Buntingford).—*Using Swarm-catchers.*—These do away with the necessity of clipping the queen's wings, as, when properly worked, they catch the swarm with the queen as she leaves the hive. We presume the above is what you mean by "self-hivers." We have had no experience with the one you mention.

MONKEY (Lewis).—*Best Flowers.*—You will find a list of the best flowers and plants on page 159 of "Guide Book." If you send to Messrs. Sutton and Sons, Reading, they will send you a very complete list of bee-flowers, the seeds of which they supply. All those of most value, however, are mentioned in the "Guide Book."

J. S. W. (Suffolk).—*Bees in House.*—You do not say in what part of the house the bees are situated or the means you would have for getting at them. It would be necessary to have full particulars before we could advise. Under some conditions it is quite possible to remove bees without smothering them. There is a long account of how this has been done, with illustrations, in this month's *Record*, which can be obtained from this office for 2½d.

ANXIOUS (Sheffield).—*Bees Visiting Drains.*—You can attract your bees to the drinking-fountain if you put a little honey into the water, place the fountain in a warm, sunny place, and protect it from the wind. The bees probably find the liquid from the drains warmer than the water you are providing them with or that in the stream. If you are able to give the water warm the bees would prefer it.

B. B. J. (Sittingbourne).—*Obtaining Comb-honey on Skep.*—1. The surplus arrangement for skeps can be placed on any skep provided it has a hole in the top. If there is no hole one must be cut out. There is no necessity to drive the bees into a new skep, unless the one they are in is too old, and you want to get rid of it. 2. Yes, you would increase the population with two queens, and if all goes well you would get a larger quantity of honey. The swarm could only issue with the queen from lower brood-chamber, as the one above would be prevented from doing so by

the excluder. 3. For examinations for third-class expert certificates, apply for particulars to the Secretary of the B.B.K.A., Mr. W. Herrod, 8, Henrietta Street, Covent Garden, London, W.C.

H. H. D. (Somerset).—*Bee-keeping in Canada.*—1. There is an Ontario Bee-keepers' Association in Canada. The secretary is P. W. Hodgetts, Department of Agriculture, Parliament Building, Toronto, who would give all information. No association in Canada is affiliated with the B.B.K.A. 2. Lysol and soluble phenyle are analogous, and can be used in the proportions recommended on page 198 of the "Guide Book," recipe No. 9. It is quite equal to carbolic acid, but is entirely non-corrosive and non-poisonous as regards human beings and animals.

L. W. (Bradford-on-Avon).—*Using Sections in Non-swarming Chamber.*—The usual method is to get combs built in shallow frames below brood-chamber in non-swarming hives. If you try to get sections built you will find the combs become rather dirty, which spoils their appearance as comb-honey. Non-swarming hives have not been found very practical, and few bee-keepers now use them. Room in advance of requirements and plenty of ventilation will usually prevent swarming. Thanks for your suggestion, which shall have consideration.

E. T. (Maldon).—*Syrup for Bees.*—The sample is quite right, except that it is rather too thin.

Inquirer (Eccles).—*Utilising Old Candy.*—1. There is no need to destroy the candy, and if you store it, it will either get sticky and run or will become too dry. Make it into syrup for present use. 2. Yes.

Suspected Combs.

T. P. (Dunmow).—The comb is too old and dried up for us to diagnose whether foul brood is present or not; but the stock was evidently queenless, and, not being able to raise a queen, has died out from natural causes. We should advise melting down the combs for wax; it should afterwards be sterilised before using, or else burn combs, frames, quilts, &c., and scrub out the hive with soda and boiling water, using the usual precautions against disease.

W. Macdonald (Inverness).—No. 1 sample is affected with foul brood in the advanced stage. No. 2. A fertile worker has been present, as shown by the elongated cells containing drone-brood. If you have the latest edition of the "Guide Book" you will find instructions for dealing with both cases.

G. H. (St. Davids).—The brood in comb is chilled; there is no disease.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

ANNUAL MEETING.

The annual general meeting of members was held at 11, Chandos Street, Cavendish Square, on Thursday, April 14, Mr. T. W. Cowan, F.L.S., in the chair. There were also present Miss E. Scott-Walker, Mrs. E. Chapman, Mrs. E. E. Ford, Miss E. F. Kettlewell, Mrs. E. Illingworth, Miss W. M. Baizley, Miss Barnes, Mrs. W. Herrod, Miss L. M. Carr, Miss La Mothe, Mrs. Mason, Dr. T. S. Elliot, Colonel H. J. O. Walker, Messrs. C. L. M. Eales, W. F. Reid, J. B. Lamb, A. G. Pugh, G. H. Skevington, W. W. Falkner, L. Goffin, T. Bevan, O. R. Frankenstein, G. W. Avery, C. H. Bocock, R. T. Andrews, R. Lee, L. McN. Stewart, E. Watson, F. B. White, G. H. Sander, H. Edwards, G. W. Judge, L. Illingworth, A. W. Salmon, H. Brice, R. W. Furse, C. Weaver Price, J. C. Mason, V. E. Shaw, J. Smallwood, F. Sitwell, A. Wilmott, W. E. Hamlin, E. Walker, and W. Herrod (secretary).

Apologies for enforced absence were read from the following: Miss Gayton, Miss K. M. Hall, Messrs. G. Hayes, W. Gee, E. R. Stoneham, F. W. L. Sladen, General Sir Stanley Edwardes, and Rev. G. C. Bruton.

The minutes of the previous annual general meeting were read and confirmed.

The Chairman, in opening the proceedings, apologised for the lateness of the annual meeting, and explained that it arose from unprecedented circumstances, owing to the illness and breakdown of their late secretary, and also of his brother, who had undertaken to do Mr. E. H. Young's work during his disablement. The Council, after repeated endeavours, had only quite recently been able to obtain possession of the books, and had been obliged to get the accounts for the previous year made up by a ledger clerk. Their thanks were due to Mr. Herrod, who voluntarily offered his assistance and had been of invaluable service during a very trying time, and they were glad to have him now as their secretary.

In moving the adoption of the report and balance-sheet, the Chairman alluded to the loss the Association had sustained by the death of Mr. G. Wells, whose name was so well known in connection with the system of working two queens in a hive: and also that of Mr. R. Godson, who was an ardent worker and secretary of the Lincolnshire B.K.A.

He next alluded to the consideration the Council had given to the reorganisation of the Association by appointing a special committee, who drew up a scheme with this object in view. This had been circulated amongst the members of all associations, and May 19 was fixed for its consideration by the delegates of the different associations. The Council hoped that careful thought would be given to the proposals, and, if they were not satisfactory to any of the associations, that they would state what they consider should be done to unite them. He was quite certain that the time had arrived when something should be done to enable the associations to combine, for if all were working independently the industry would make very little progress, and could never take that position in the country which it should do. They could do little with the Government until they were strengthened by combining. It was not sufficient to condemn the scheme without suggesting something better. He therefore hoped that those representatives who attend the meeting will be prepared to make practical suggestions of what they want and what they think should be done to bring them into closer touch with one another and with the B.B.K.A.

Alluding to the finances, the Chairman congratulated the members on their improvement. The receipts for the year had been £336 12s. as against £222 12s. 4d. the previous year—an increase of £114; but as the Horticultural College, Swanley, paid two years' fees in the year, it made the true increase on the previous year £94, which must be gratifying to all. There had been a slight increase in the expenditure, but for all that the general fund showed an increase of £59 15s. The balance showed an excess of assets over liabilities of £152 4s. All the liabilities had since been paid, and he was pleased to say that upwards of fifty new members had joined the Association.

The report showed that good work had been done by Mr. Herrod at the Apiary and at the exhibitions, of which he had sole charge. During the year in the examinations which had been held three candidates obtained first-class, thirteen second-class, and eighty third-class certificates. The insurance also showed progress, as there were 11,281 hives insured as against 9,706 the previous year. Of the insurers, 597 were members and 204 non-members of associations. Without going into further detail, he moved that the report and balance-sheet be received and adopted.

The motion was seconded by Colonel Walker, supported by Mr. A. G. Pugh, and carried unanimously.

Mr. Watson proposed, and Mr. Falkner seconded, a very hearty vote of thanks to the retiring Council and officers, Mr. Watson remarking that they were to be

congratulated on doing a tremendous amount of work and coming through a very critical time so well. The motion was carried with acclamation.

Mr. Reid proposed the re-election of vice-presidents, hon. members, hon. corresponding members, hon. treasurer, auditor, and analyst for the year 1910, in accordance with Rules 5 and 9. This was seconded by Mr. Eales, and carried unanimously.

It was resolved, upon the suggestion of Mr. Reid, that the Council increase the number of hon. members, and that to this end the Council obtain and consider the names of eminent scientists and others, and submit them to the next annual meeting for election. Mr. Watson strongly supported what Mr. Reid had said, and maintained that this was exactly what was wanted to broaden the basis of the Association, which should be their object, and would be far preferable to the new scheme, with which he was not in sympathy and upon which he would have more to say at the meeting in May.

Mr. Reid moved and Mr. Eales seconded, and it was carried, that Dr. L. A. Dixey, President of the Entomological Society, be elected an hon. member.

Mr. Bevan gave notice that he would move at the next annual meeting that Rule 5 be altered, the first and second lines to read as follow: "The Association shall have power to elect honorary members. Also," &c.

The Chairman said, with regard to the election of the Council, they had heard a great deal lately about strengthening it, and although there had been an opportunity of doing so, a notice having been put in the Bee Journal stating that nominations would be received up to a certain date, only one nomination had been sent in.

Mr. G. H. Sander then proposed the re-election of the Council for 1910, with Captain Sitwell in the place of Mr. Till, who, he was sorry to see, had resigned; the reason, he supposed, was on account of ill-health. He was pleased so little change had had to be made, for a change in government at such a critical period of the Association would have been unsatisfactory. Having embarked upon the new scheme, they should remain in office until its fate was decided.

Mr. H. Edwards seconded the proposal, which was carried.

The Chairman said it was impossible to pass over the resignation of Mr. Till without passing a very hearty vote of thanks to him for all he had done for the Association for a great number of years. Mr. Till had served upon that Council, and had rendered valuable help to the Association both in time and financially, which probably members did not realise. Age and ill-health (the causes of Mr. Till's resignation) would assert themselves in time, and his resignation was only anticipating that of one or two others for the same reasons.

Mr. Reid seconded, and said no one regretted the resignation of Mr. Till more than himself. He was open and fearless in manner, always ready to give his reasons for pressing his views, whether considered good or bad by his colleagues. He also was ever ready to give his time and money to help on the cause of the Association. This resolution was carried with acclamation.

Mr. Salmon then rose to move his resolution: "That all experts touring for affiliated associations shall hold B.B.K.A. certificates." He understood from conversations he had had with Mr. Young and the late Mr. Broughton Carr in the past that all experts working officially for associations and paid a salary must be certificated, yet he found that there was at least one association employing a touring expert who did not hold a certificate from the B.B.K.A. This he did not think advisable. He would also suggest that all experts who lectured should hold at least the second-class certificate of the Association. He was quite sure from reports he had had of local men lecturing that many of them were not capable of doing their work in a satisfactory manner, and no doubt this would be prejudicial both to the county and parent associations.

Mr. Frankenstein seconded. Dr. Elliot considered the idea a good one, but did not see what power the Association had in the matter. He thought it would help matters if the Association kept a register of experts and the experts paid a registration fee. Associations or county councils could then apply to the Association for names of qualified persons willing to serve. This would benefit both the experts and the Association, and would also give the Association a hold over those to whom they granted certificates. If they were found to be incompetent or neglectful their names could be removed from the register.

Mr. Pugh thought it would be a difficult matter to carry out. He agreed that it would be very nice if it could be done. At the same time, having been secretary to a county association, he knew how difficult it was to obtain experts to do the work. The matter could be met if the secretary were instructed to write to secretaries of associations asking them, as far as possible, to appoint only qualified men.

Mr. Andrews knew of a number of men in the smaller associations who went amongst the bee-keepers and gave advice, and thought it a pity to debar these, al-

though they did not hold certificates. Even those who held a certificate did not always make a legitimate use of it. He knew that they sometimes used their position for business purposes only, and did not keep abreast of the times with their knowledge. He would suggest that a limit of, say, five years be put upon the certificate, the holder at the end of that time to present himself for examination again.

Mr. Watson considered it was the ideal to work towards, but the present was not the time to press the matter. It was difficult to get people who could talk bees. He himself, though not holding a certificate, had recently given a talk on bees, the result being the commencement of an association.

Miss La Mothe considered the idea an excellent one, especially for touring experts. She knew cases where both the local and parent associations had suffered through incompetent people undertaking the work.

Mr. White considered it very undesirable for the Council to interfere. The associations were the people best qualified to judge who should do their work, and he should oppose the proposition.

Mr. Falkner stated that in Leicestershire they had copied the Notts Association, and had local experts, and in doing this they found it was not always possible to get certificated men, though he had no doubt that those employed were quite capable of passing if they presented themselves. It would be a pity to debar these, though he quite agreed that where possible qualified men should be employed.

Mr. Lamb, to save time, moved as an amendment that the matter be left to the Council to deal with as they think fit.

Mr. Pugh seconded. Upon being put to the meeting, the amendment was carried.

Upon the proposition of the secretary, seconded by Mr. Edwards, Mr. R. Mossop was elected hon. solicitor to the Association.

Mr. Skevington: "I should like to know how it is there is no reporter here. Why have not the daily papers sent a reporter? We want publicity." Mr. Lamb said had it been a meeting where a prominent man such as Lord Rosebery had been speaking there would have been plenty of reporters there, but the London papers would not trouble about such small meetings as this. To employ a reporter would be an expensive matter.

The Secretary, in reply to Mr. Skevington, said a reporter had never been present at the annual meeting. He had tried to get the papers to send one, but had failed for the reason given by Mr. Lamb. The Conversazione had been reported for a number of years (as it would be that evening) by the BRITISH BEE JOURNAL, the Association taking advantage of the work done for their minutes without contributing to the cost.

Mr. Falkner then brought forward a matter *re* delegates to Council meetings. The Chairman thought it would be best to leave the matter to the meeting in May, when it could be fully discussed with the scheme.

Mr. Edwards was very pleased to hear the Chairman's remarks *re* discussion. He quite understood, and he was sure others were of the same opinion, that the scheme was to be brought forward at that meeting for their acceptance or rejection, and that if any suggestions for amendment were made they would be ruled out.

The Chairman said he was sorry if that idea had been prevalent. What they wanted at that meeting was a full discussion and suggestions as to the constitution of the B.B.K.A., and he hoped that a full attendance of delegates would be obtained, and that they would come prepared with suggestions for those parts of the scheme with which they did not agree.

An adjournment was then made, and, after light refreshments had been partaken of, the members reassembled for the Conversazione, which will be reported in our next issue.

After the annual meeting a meeting of the new Council was held for the purpose of electing officers and committees, those present being Messrs. T. W. Cowan, W. F. Reid, A. G. Pugh, O. R. Frankenstein, C. L. M. Eales, Thos. Bevan, G. H. Skevington, R. T. Andrews, J. B. Lamb, H. Jonas, E. Walker, Captain Sitwell, Dr. T. S. Elliot, Colonel H. J. O. Walker; county representatives: Messrs. F. B. White, W. Hamlin (Surrey), V. E. Shaw (Crayford), W. W. Falkner (Leicester), G. W. Avery (Cumberland); and W. Herrod (secretary).

Mr. Lamb proposed, and Mr. Skevington seconded, that Mr. T. W. Cowan be elected chairman and Mr. W. F. Reid vice-chairman, and thanked for their past services. This was carried unanimously.

Mr. Cowan remarked that he would much rather have retired, but as it was their wish that he should remain, he would do so for a little while longer on the distinct understanding that he was relieved of a lot of the work and responsibility. It was impossible for him to continue doing the amount of work that had fallen to him during the past twelve months.

The following were elected as Finance Committee: Messrs. J. B. Lamb, Thos. Bevan, C. L. M. Eales, A. Richards, J. Grimwood, E. Garcke, and G. H. Skevington.

Exhibition Committee: Messrs. C. L. M. Eales, E. Walker, A. G. Pugh, Thos.

Bevan, O. R. Frankenstein. Emergency Committee: Mr. W. F. Reid, with power to add.

Cheques were passed for settlement of account with Mr. E. H. Young, salaries, petty cash, printing, &c., amounting to £70 18s. 11d.

The matter of a reporter being engaged for the annual meeting was brought forward, and eventually Messrs. W. F. Reid, J. B. Lamb, and Thos. Bevan were elected a Publication Committee to deal with this matter in the future.

The following were elected members of the Association: The Hon. Mrs. Denman, 9, Swan Walk, Chelsea, S.W.; Miss A. M. McEwan, Croft Cottage, Haddenham, Bucks; Mr. C. Weaver-Price, Ashgrove, Brecon, S. Wales; Mr. A. E. Palmer, Bergnet, St. James's Road, Harpenden; Mr. F. P. Howard, 91, New Road, Ware, Herts; Mr. T. Chater, 46, Hinton Road, Wallington; Harcharn Singh, 38, Highbury Place, Highbury, N.; Mr. C. Kennington, Hillside, Goring, Oxon; Mr. G. D. Lake, Brookfield House, Mortimer, Berks; Mr. C. Whitbread Graham, Hale End, Woking; Mr. T. Newell, Radwell, near Baldock, Herts; Mr. F. Newman, Erith Lodge, Bexley Heath, Kent; Mr. J. C. Harker, Danehurst, Champion Hill, S.E.

Owing to lack of time several matters were held over till the next meeting.

The next meeting was arranged for May 19. Finance Committee, 3 p.m.; Council, 3.30 p.m.; special meeting *re* scheme, 4.30 p.m.

AMONG THE BEES.

BEE-INSURANCE.

BY D. M. MACDONALD, BANFF.

For the small sum of *one penny* per hive any bee-keeper in the British Isles may insure his bees for a whole year—from the end of March, 1910, to the end of March, 1911—against their liability to third parties for damages to persons or property occasioned by bees from the insurer's apiary. One would think that every owner of bees would rush to participate in this safeguard, but not one in a hundred does so. Perhaps many apiaries are kept apart from public highways and dwellings, and many more are in retired situations where there will be little or no likelihood of loss or injury by vicious bees. Their owners therefore ignore this boon which is placed at their disposal, but if they could appreciate the full benefit, even these might be led to insure against contingencies which may happen. The great majority of apiaries, however, are situated in close proximity to dwelling-houses, near public roads or side-paths, and in the centre of towns, villages, or hamlets, where every day in summer and at all times of the day persons, dogs, cattle, horses, and other animals are passing to and fro. While no accident has happened in the past, still one may occur at any time from some cause over which the owner has no control. Here, then, is a case where insurance is a simple duty. This might be brought home to bee-keepers by the visiting expert, who should be provided with a number of proposal forms, sent by the B.B.K.A. to him or to his association. The general secretary might circularise or write county secretaries on the subject, and thus, I think, easily double the number of last year's insurances. Bee-keepers might themselves communicate with Mr. Herrod and get all particulars. A post-card will do it all.

From "Queen-Land."—Three points in Mr. Simmins's circular strike me as worthy of note and comment. While he is inclined to advise that ordinary queens may be given to a de-queened hive in twenty-four hours, or in less than half that time when his plan of direct introduction is followed (from noon to dusk), yet under his "guarantee" system he insists that the new queen should not be inserted before the *third* evening after removal of old queen. We may take it that this rule is deduced from this veteran's forty years' experience in bee-culture, and nearly that period as a queen-rearer. But my "point" is that he advises us to avoid the *second* day. While the introduction may take place the first or third day, "there is some natural enmity fostered by the bees towards any queen offered during the second day of queenlessness." I am not certain that I have ever seen the matter put just in that way before, but the spirit of unrest generated by the knowledge that they have no queen, followed by the preparations for replacing her, may create this feeling of enmity towards an alien queen, and cause her destruction.

We hear a good deal of the value of young bees in securing safe wintering and preventing spring dwindling, and I have repeatedly used the usual formula, just because I believed I was advising the best specific "cure" for both these ills; but I think there should have been added an addendum pointing out that bees may be *too* young, and this leads me to my second point. Mr. Simmins insists that late-bred workers are "soft," and I agree with him. Quite recently, when asking about late honey-plants, I added a rider questioning if bees were not better inside late in autumn than out foraging for pollen or honey, which would keep up untimely breeding. Reasoning from natural laws, these late-bred bees, confined to the high temperature of the hive-interior, and pre-

vented from taking a natural flight to exercise their organs, must be pampered and tender. As gardeners say of their bedding-out plants, they require to be hardened off. Therefore too late breeding should be avoided; in other words, there should be no stimulative feeding late in autumn.

I have time and again advised against the too free use of candy. While it is a good enough food in an emergency, it rouses the bees unseasonably, and tempts them out on untimely flights. A well-stocked larder containing healthy food, either good honey or well-made syrup, supplied to a stock by the end of September, is the best possible guarantee that health, strength, and energy will attend their first spring flight, and abide with them until fresh nectar can be gathered from the new season's flowers. I quote a sentence or two from "Queen-Land" on this head: "The well-housed colony requires no pampering. Did anyone ever know a *well-found* stock fly at unseasonable hours during autumn and winter? And in spring it is only those stocks which have been needlessly stirred up by feeding too early in the season that attempt undesirable flights, followed by spring dwindling." I think these are wise words.

Hints to Wax-renderers.—As many will be trying their hand at this pastime, it may be seasonable to give a few hints on the subject. I expect quite a few will have empty hives on hand after last season's semi-failure, and if the combs are not perfectly formed, or if there is any hint of suspicion about them, then the best advice is to run them down into wax. Crumble the combs down into small particles, and further crush the mass in order that the cocoons may not retain the residue of wax in their folds. Steep the combs or the crushed mass in soft water until they are thoroughly soaked. Then put them into your smelter in boiling water; rain-water suits best. Do not over-boil, as by doing so you will spoil the quality of your wax. For the same reason use as little acid as possible, as this is in general overdone, and use none at all except for old combs. Cappings and virgin wax require no acid, and, by the way, melt down any such separate from brood-combs. If you have no "Gerster" or similar wax-extractor, avoid any pan where the comb will come in contact with iron, as this blackens the wax. An enamel pan is suitable. If done at the kitchen fire, damp the space all round, as then any drops can be lifted in small cakes without causing a mess. Cool your cake slowly, and, if possible, scrape the sediment off the lower side before the mass quite cools, as then it is easily done. If you have not yet seen "Wax Craft," purchase a copy.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION.

[7794.] Your correspondent A. Green, Notts, writes in last issue of the JOURNAL (7789, page 146) against legislation, and offers an alternative to a Foul Brood Bill. What is the alternative? "Instead of the police, I would give county associations something of a practical and useful nature to do. If there is one thing these associations ought to do, it is to keep their respective areas free from foul brood," &c. Here is Mr. Green's alternative: but surely, Mr. Editor, your correspondent must be a sort of modern Rip Van Winkle, judging by his scant knowledge of the doings of bee-keepers' associations. "All these things have we tried to do from our youth up," might be the reply of the associations. Their efforts, however, are nullified by the selfishness of a few, who are ever, in a spirit of self-glorification, flaunting their own ability to deal with foul brood as an argument why we should not invoke the aid of the law to help others who wish to participate in "man's most fascinating hobby," but have not the ability to cope with the disease. "Police, law, and magistrate," names which can always be used with telling force to convince the ignorant, are being freely used by the opposition, but few indeed among those who are agitating for a Foul Brood Bill anticipate the necessity for the interference of either police or magistrate, except on rare occasions.

If the reduction of foul brood from 60 per cent. to 7 per cent. is not doing "something of a practical and useful nature," what is it? Can Mr. Green realise the anxiety, the self-denial, and strenuous labour, to say nothing of the amount of money which has been expended in order to effect this reduction of foul brood, all of which is being nullified by the action of a few, whose best argument in defence of their position is, "Can I not do what I like with mine own?" "Inasmuch as ye have done all these things without the aid of law, police, or magistrate, we will not suffer you to obtain the only means by which you can accomplish the complete fulfilment of your good work"—this is the substance of the opposition argument. Is further comment necessary?

In reply to "Flos" (7791, page 147), I remember the first case of disease I ever saw, more than twenty years ago now, was in a skep that had been taken up in the usual way by brimstoning the bees. Since then I have seen more cases of disease in skeps than I can remember. A few years ago I purchased four skeps, guaranteed free from disease, from a bee-keeper in a distant county. They were intended for use in an examination of candidates for third-class certificates. On inspection of some of the combs, which were broken down in the journey, foul brood was discovered on arrival. Mr. Crawshaw will remember the incident. To say that disease does not exist in skeps because the combs are destroyed before they become old is erroneous. I have seen it in skeps and also in bar-frame hives before the combs were six weeks old, and I know of both skeps and bar-frame hives which contain at the present time combs at least twenty-five years old where no trace of disease exists. The gentler means suggested by "Flos" have been tried. Experts have been sent out into the highways and byways to plead with the stubborn and advise the ignorant. Men of tact and knowledge have been giving their whole time to this, and more than once gentlemen of means have given our experts money to replace bees and combs which poor bee-keepers in their locality have consented to destroy because of disease. Sometimes even this generosity has been refused, and diseased stocks retained in preference to having them replaced by healthy bees.

Compulsion is an ugly word. Persuasion is infinitely to be preferred. To be compelled to keep a clean apiary evidently does seem very distasteful to some. Even to be asked by a polite inspector if their stocks are clean, they declare, will at once and for ever quench their love of the craft. There is another side to the question. Is not the tyrannical kind of compulsion exercised by the wilful owner of diseased stocks over his bee-keeping neighbours more detestable even than the visit of a friendly expert or inspector? Which is interfering most with another's freedom?—G. W. Avery, Heads Nook.

[7795.] I have been a reader of the B.B.J. now for twenty-six years, and I never remember missing a copy. During that time I have read a good deal of correspondence relating to the foul-brood question, and I especially note the few remarks in last week's B.B.J. (7791, page 147), which, to my mind, are very sensible, and quite hit the mark. I myself am fixed very much like your correspondent, being the largest bee-keeper in this district. At the present time I have about 112 stocks of bees under my management, which are scattered about within a six-mile radius of my own apiary. As for foul brood, I have only seen one case in this district during the last twenty years, which makes me incline to the opinion that many who quote foul brood know very little about it. I am led to believe that much of the mischief is caused by bee-keepers themselves, who are always disturbing the bees, instead of letting them be at rest. Past experience has taught me the less bees are disturbed the better. When I give them a spring cleaning they are left unmolested until I put on the supers. I do not think legislation is necessary, and it seems to me that there are too many Government officials already in this country. No matter where you go you come across them. I should like to know where the £ s. d. is coming from to pay the inspectors appointed to look after us poor noodles. I trust you will find room for these few remarks in the B.B.J.—E. J. Thompson, Gowdall, Yorks.

[7796.] Judging by the correspondence which has lately appeared in your valuable journal, it appears to me that the fight for legislation *re* bee-disease is not likely to be one-sided. I cannot myself imagine good bee-keepers opposing anything that tends to their own benefit and which clears the way for progress in eradicating bee-diseases, especially our old enemy foul brood.

I suppose we must have an opposition, but I have yet to meet a real lover of bees who would knowingly tolerate foul brood in his apiary, and it is only fair that honest bee-keepers should be protected from careless and indifferent neighbours who happen to have bees in their possession very often diseased. Every touring expert knows quite well that the chief trouble in eradicating foul brood from a district is not with members of associations, but through a careless few, who absolutely refuse to allow an inspection or own up that anything is wrong with their bees, and who frequently boast of having the largest knowledge on the subject and the biggest "takes" of honey in the district. Every expert knows such people, and from experience I am convinced that these are neither readers of the B.B.J. nor members of an association.

I think most of the arguments against legislation are simply stretches of the imagination which emanate from people having very little experience outside their own apiary or immediate district, much less the knowledge of the difficulty associations have in dealing with non-members.—Joseph Price, Old Hill, Staffs.

FOUL-BROOD LEGISLATION.

[7797.] Having read in the B.B.J. the different letters regarding foul-brood legislation, I must say I quite agree with the opinion of Mr. Woodley (page 137, April 7) that there is no need to bind up the bee-industry with red tape. What is the use of trying to cure foul brood while people are allowed to import it wholesale by buying queens and stocks from the hotbeds of disease?

This is not done by the poor cottage bee-keeper; but still he will have to suffer. As to the good results of a Foul Brood Act, I fail to see how the cottager will benefit. The Government takes the industry under its wing, and the next thing is a small tax per hive, which we can ill afford, for the Government cannot pay experts on nothing.

I see the question has been put to the vote by one of the county associations. Now, if this Act is wanted, I say let it be by the vote of every British bee-keeper, not merely the members of the bee-keepers' associations, who form but a small portion of those engaged in the industry.

I should not care for any inspector to examine my bees unless he and everything connected with him were thoroughly disinfected, especially after reading in April *Record* the incident of last September in Herefordshire.—E. Woollard, New Catton.

[7798.] Bee-keeping is increasing with rapid strides owing to the excellent service rendered by the B.B.J. and *Record*, the daily Press, associations, and by numerous bee-keepers who have carefully followed the instructions of the invaluable "Guide Book." This being granted, it is imperative that every precaution should be taken to guard those commencing against the risk in purchasing stocks or swarms from some bee-keeper who offers to dispose of stocks he has grown tired of overhauling, which I have found in ten years' dealings generally suffer from foul brood or kindred diseases.

The novice in bee-keeping addresses his inquiry to the dealer who offers healthy stocks, &c., at market prices, but one of these tired bee-keepers offers at a few shillings less to clear. The novice, in many instances, accepts, without seeking advice, soon to find out his mistake, as he learns to his cost. Nothing is so unpleasant and disheartening to the keen beginner as to listen to the verdict of an old hand who explains the mistake he has made and the trouble and expense he has now before him to eradicate the disease. Compulsory legislation would ensure proper attention to the brood-chambers of stocks.

In the course of my perambulations I visited a so-called apiary where the brood-chambers had not been examined for years, and imagine, if you can, the condition of stocks of bees in this hopeless state; and when one is a near neighbour to the owner of these neglected stocks, and is endeavouring by paying every attention to them to run successfully a fairly large apiary, what remedy can one hope for but compulsory legislation? Are we to muddle on and allow every other nation to show us our errors? I would suggest that steps be taken to gauge the feeling of bee-keepers in the matter by attaching in each issue of the B.B.J., *Record*, and kindred journals a perforated form asking readers to reply, agreeing to compulsion or stating why they object to it. Also, forms to be addressed to all associations of bee-keepers in England, Wales, and Scotland, and the Channel Islands, and suggestions for clauses to be inserted in the proposed Bill, to be forwarded to the committee of the B.B.K.A. for their assistance in framing a satisfactory measure, which shall again be voted upon before seeking legislative powers. Success must ensue if all will unite against the common foe.—T. D. Sinfield, Luton.

THE BORDER B.K.A.

[7799.] I think you will be pleased to hear that we have now got "The Border B.K.A." fairly started. The committee of the Wooler and District B.K.A. were delighted when I informed them that it was proposed we should expand from a purely local to a wider sphere of work, and they one and all canvassed their own neighbourhood, with the result that at a general meeting held in Wooler on the 5th inst. the change of name was unanimously agreed to, and, better still, we got our first members on the Scotch side; so now we are in fact, as in name, "The Border" B.K.A. I have been invited both sides of the Tweed to give lantern lectures as soon as possible, which is very encouraging as showing the interest aroused.

There was a long discussion on foul brood, and it was unanimously agreed to petition the Board of Agriculture for an Act giving power to competent inspectors to deal with bee-diseases.

Also arrangements were made for holding a show in connection with the Horticultural Show in August, for which numerous classes and a large prize list were drawn up, the B.B.K.A. silver and bronze medals being considered a strong inducement for a large entry.

The secretaries were instructed to make the usual application for affiliation with the B.B.K.A., and though at present the youngest, we trust it will not be long before we are one of the sturdiest offspring of that body.—F. Sitwell, Yearle House, Wooler.

SOWING CLOVER ON RAILWAY EMBANKMENTS.

[7800.] Our railway embankments should provide far more bee-forage than they do, and it occurred to me that it would not cost a great deal to plant clover on miles of railway cuttings. Last year I wrote to the secretary of one of our Scottish railways, and readily got permission to sow clover on their embankments, or, more accurately, they suggested my handing the seed over to an inspector; but I got one of the unemployed, and, giving him a short, strong rake, told him to rake over the land here and there and sow the seed as thinly as possible. In this way 9½ lb. of seed was used. Some of it came away when it was planted, but more seems coming up this year. A bee-keeping friend of mine carries some seed in his pocket all spring, and keeps sowing a little anywhere and everywhere. Messrs. Sutton and Sons quote 70s. per cwt. (about 8d. per lb.) for "screenings"—that is, *Trifolium repens perenne*, white or Dutch clover, without the weed seeds extracted, which, I suppose, would be quite suitable for sowing on railway embankments. I have been quite unable to hear anything in this country, either from the Board of Agriculture or from seedsmen, of the white clover (not white Dutch) referred to on page 88 of Messrs. Root's "A B C and X Y Z of Bee-Culture," of which the seed cannot be saved. Perhaps it is an indigenous American plant. But Messrs. Lawson and Son (Limited), Edinburgh, have supplied me, through wholesale friends, with a sample of wild white clover, costing 1s. 6d. per lb. wholesale.

I have obtained from my old friends, Vilmorin, Andrieux, and Co., of Paris, 4 lb. of white sweet clover, or white melilot or Siberian melilot (*Melilotus alba*), at 10d. per lb., but costing, with charges, 1s. 3d. per lb. (79s. per cwt.), and 2 lb. of yellow sweet clover (*Melilotus officinalis*), costing respectively 1s. 6d. and 2s. per lb. I have sown nearly half of these along a mile and a quarter or more of railway embankment, broad-casting it in rainy weather, when no birds were about, and just before an afternoon of heavy rain. (I shall be glad to send 3 oz. of seed of white and 1½ oz. of yellow for 6d. to any bee-keeper who will plant it, so far as it goes.) Messrs. Root say (page 92) it is "spreading itself from one end of the country to the other," and that the bloom is "fairly covered with bees," and also that it seeds most readily, and sows itself along the railways.

I would be obliged if anyone can tell me how the hawthorn should be treated to make it bloom well, and how it is planted. Will it grow readily from cuttings, and when should these be put in the ground?

Further suggestions as to the increase of bee-forage in townships would be valuable. Our muncipal Superintendent of Parks and Gardens has proved quite ready to help bee-keepers where possible.

I write in the hope that we may all be encouraged to do more to supply our little friends more liberally with the nectar they need to make us honey.—JOHN W. MOIR, 30, Shandon Crescent, Edinburgh.

DESTROYING WASPS.

[7801.] The time is rapidly approaching when our old friend (enemy, some would call it) the wasp will be appearing again. Towards the end of this month and early in May we may expect to see the queen-wasps creeping from crannies and unthought-of places where they have been hibernating since October, flying hither and thither seeking a suitable place to build a nest, and at that time they are generally easily caught and killed. Most bee-keepers would like to see something done to keep down their numbers, as wasps are a great nuisance in September, when bees are being fed up for the winter.

A plan I have tried with success is to give the local schoolmaster, especially if he is a bee-keeper, a few shillings to be divided amongst the children—say, a penny for every two or three wasps in May, as all wasps are queens during that month. Now this may be easily done by getting up a small subscription of about 5s. amongst the various bee-keepers in any district, and handing it to the schoolmaster to distribute; and if the children got, say, a halfpenny for each wasp they brought, the 5s. would be equal to the destruction of 120 wasp-nests: or even if half that number were destroyed it would be quite worth the 5s. paid to the children. If this is tried, the subscribers will be astonished, as I was, at the number of queen-wasps the children can pick up.—J. T., Cumberland.

Queries and Replies.

[4012.] *Small Wax-moth.*—I found a small maggot on one of the bars of my hive, and, being only a young hand at bee-keeping, I enclose it to know if it is a grub of the wax-moth. I hardly think it is, as I have examined the hive, and find everything in good condition. It may, perhaps, be the grub of the earwig, as I was troubled very much with these pests last fall owing to so much rain. I shall be very pleased if you

can tell me which it is, and what would be the best steps to take if it really is a wax-moth. The hive has been rather inclined to damp this winter. Would that be the cause of breeding such as this?—W. J. PRESCOTT.

REPLY.—The grub sent is that of the small wax-moth. It does very little harm, living principally upon the débris at the bottom of the hive. Kill all you see when manipulating, also keep naphthaline in the hive, and a little dusted in amongst the quilts will help to keep the moths away. If the hive is damp you should be careful to remedy the failing as soon as possible; damp is most injurious to the bees. Is the roof ventilated? If not, bore a ½-in. hole at each end of the gable, and cover with perforated zinc. If the roof leaks, cover with calico, and paint it well. Remove the damp quilts and replace with warm, dry ones as soon as possible.

Echoes from the Hives.

A TALK WITH AN OLD SKEPPIST.

"So we stand under the two old sycamores where, in the month of May sixty years ago, you bought your first swarm. Did these two grand old trees, whose tall branches are interlaced above, look as old and big as now? Look straight up; how the warm April sun is shining on the bursting buds; there are myriads of them. It was blind John Nicholson you bought the swarm from, wasn't it?" "Yes," my old friend replied; "he was quite blind, but had not always been so. The swarm was in a new skep; when John made a skep it would not budge if you stood on it with all your weight. It just seems like yesterday. He used to sit by the hives listening to the bees flying, like the sound of waves, he would say, on the sea-shore. In June he would take me along the row of hives and say, 'This is a good one,' or 'This one will soon come off'; and there never were such bees to swarm. Every May-time, when I hear the bees humming in the two old sycamores, I think of blind John Nicholson."—J. N. K., Stocksfield-on-Tyne.

Notices to Correspondents.

⁂ A reader of the BEE JOURNAL, who is in poor health, having just recovered from a serious illness, would be glad to hear of a situation, as he is in straitened circumstances. He states that he holds a third-class certificate and has a good knowledge of bee-keeping, and would assist in the garden or with poultry; he also understands hive-making and carpentry, and is willing to make himself generally useful. Should any reader like to communicate with our correspondent, we will gladly post any replies sent to this office on to him.

T. H. B. (Uckfield).—*Best Honey-producing Plants.*—The few flowers that one is able to plant in a garden will not make any appreciable difference in the honey harvest, as it requires large masses of bloom to do so. Every little helps, however, and sowing suitable flower-seeds should be encouraged. You will find a great part of your inquiry answered in our reply to "B. W. D. (Sheffield)," page 162. A good deal of information such as you ask for has been given in the B.B.J. from time to time, and we shall hope to give more as opportunity occurs.

A. M. (Ridgeway).—*Dealing with Irregular Combs.*—Yes, cut them down very carefully, using a warm knife to avoid tearing the combs. If there is honey in the cells, choose a time in the evening when bees have ceased flying (on a warm day), to prevent robbing.

J. L. (Fradley Junction).—*Position of Frames in Hive.* — See reply to "R. R. B.," page 150, in last week's BEE JOURNAL.

BEE-MAID (Northants).—*Robbing Started.*—1. It is not surprising that you started the bees robbing by uncapping cells and letting cappings and scrapings fall on paper beside the hive. You will find on page 162 of the "Guide Book" that when honey is scarce any exposure of sweets to bees will cause robbing. 2. You further induced robbing by removing the uncapped comb from No. 1 hive and putting it into No. 2, as it carried with it the scent from No. 1, whose bees naturally followed it. Follow out the instructions in the "Guide Book" by placing a piece of window-glass in front of flight-hole. 3. You should either have uncapped the comb away from the hive, or removed the cappings immediately on taking them off. 4. It was certainly wrong to open both hives at the same time, as at this time of the year the greatest care should be taken to prevent robbing being started.

W. M. (Bearsted).—*Using Extracted Sections.*—1. If the combs are clean the bees will repair them, and they would be quite fit for use. 2. Yes, the proportion will do at this time of year.

CERA (Scalby).—*Fermented Syrup.*—1. This is no use, and would be injurious to bees. 2. You should have your queens ready to replace the ones you take away, as it is not advisable to leave colonies queenless. 3. In uniting you should remove one of the queens or take the risk of losing the better of the two.

E. W. D. (Ilford).—*Transferring Bees to New Frames.*—Remove all frames that

contain no brood, place those with brood together at one end of hive, and put in a queen-excluder division-board. Fill the other part of hive with frames of foundation, taking care to place the queen with some of the bees on this side. The thickened combs can be removed when the brood is hatched out.

W. J. H. (St. Blazey).—*Giving Additional Frames.*—As soon as the bees crowd the frames in the hive give additional ones, putting them on either side.

HEATHER (Wolsingham). — "*Divisible*" *Heather-hive.*—We know of no agent who deals in such hives, and you would have to import them from America.

B. W. D. (Sheffield).—*White Clover Seed.*—This, as well as Bokhara clover, can be obtained of horticultural seedsmen. Messrs. Sutton and Sons, of Reading, or Mr. G. Rose, 50, Great Charlotte Street, Liverpool, could supply you with the seed.

J. C. H. (Northumberland).—*Theology and Bees.*—Thank you for letter, but the subject is not suitable for the columns of the B.B.J., and would be sure to provoke controversy.

Suspected Combs.

ANXIOUS (Jersey).—The comb is affected with foul brood. Burn dead bees, combs, frames, quilts, and all débris, and disinfect the hive, according to instructions in "Guide Book"; also spray the ground on which the hive stood with a solution of carbolic acid and water.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

NEW "W.B.C." HIVES, 12s. 6d. Will exchange for Bees, Honey, or Comb Foundation.—WILLETT, JUN., Bee-keeper, New Malden, Surrey. y 83

GREAT BARGAIN.—3 Stocks of English Bees, 1909 Queens, guaranteed healthy, new Hives, 3 spare Hives, Honey and Wax Extractors, Drawn-out Brood and Shallow Combs, 6 Super Crates, 6 Excluders, quantity of Foundation, Frames, Sections, Metal Ends, &c., all perfect. £4 12s. 6d. lot. HOOD, 46, Church-street, Horwich, Lancs. z 12

Special Prepaid Advertisements.—*Continued.*

FOR SALE, 20 Stocks of Bees, on five Frames, 12s. each; also a few Skeps, cash. — THOS. ROUSE, Rochford, Tenbury. z 11

BEES FOR SALE, several strong Stocks, in Standard-frame Hives.—T. HILL, Scotlands, Cannock-road, Wolverhampton. z 14

LIGHT Sections bought, 7s. to 8s. per doz.—Send or write to the HONIELADE CO., 23, Moorfields, E.C. z 13

FOR SALE, several strong, healthy Stocks of Bees, in straw Skeps, 12s. 6d. each.—C. SMITH, Valley-terrace, Leiston. z 10

HONEY, 5 doz. Screw-cap Bottles extra clear Clover; sample 3d. Offers.—WATTS, Chickerell, Weymouth. z 9

280 EGG STRAIN White Wyandotte Chicks, 12 10s. 6d.; with hen, 13s. 6d.; exchange for Bees or Hives. Fertile Eggs, 3s. 6d. per sitting.—J. S. WATSON, Mildenhall. z 8

WHAT OFFERS? 20 Racks Drawn-out Shallow Frames, used once.—SOUTHCOTT, Gittisham, Honiton. z 7

TWO good Bar-frame Hives and fine Goat (in milk) for sale, or exchange for Bees. Inspection invited.—W. ISAAC, Lynton, Green-road, Bournemouth. z 5

WANTED, Swarm; earliest delivery in May. State price.—J. A. SMITH, 6, East Pathway, Harborne. z 4

FOR SALE, two strong healthy Stocks, in good Hives, 15s. each; Cowan Extractor, 18s.; also Fittings and Appliances.—Particulars, BRAME, Harborne, Birmingham. z 3

"W.B.C." HIVES, complete, 14s. 6d.; "Cottagers," 11s. 6d. Wanted, Honey, Wax.—BOWDEN, Broomhill, Witley. z 2

1909 healthy prolific Hybrid Queens, 5s. each. Safe arrival guaranteed.—BRO. COLUMBAN, Abbey, Buckfast, Devon. z 1

EXCHANGE good Stock Bees and Frame Hive for Secretary Bookcase.—Particulars, C. DRAKE, Sutton, Ely. y 99

EXCHANGE Silver English Lever Watch, good time-keeper, for Skeps of Bees. Cash, £1 5s. Approval.—CRAWSHAW, Epworth, Doncaster. y 98

SALE, Bees, 10 Stocks, on Frames, 10s. Stock, healthy; Hives, &c., if required.—KEATS, Fenn, Rochester. y 96

FOR SALE, two really good Stocks of Bees, with 1909 Queens, in new Hives.—W. MOTHERSELE, 4, East View-terrace, Bradford-on-Avon, Wilts. y 92

MOLESKINS Wanted, square dried, all the year round.—MARSHALL, B.J., Worcester, Park, Surrey. y 93

FOR SALE, 6 Stocks of Bees, each on 8 Bar Frames, strong and healthy, 3 1908 and 3 1909, £1 each, carriage paid; also Booking Swarms in Rotation, May Swarms 15s. each, June 12s. 6d.—G. A. GILLETT, Bee Apiary, Moreton-in-Marsh, Glos. y 91

STRONG, healthy Stocks, on Wired Frames, 25s. each, on rail; cases, 5s., returnable.—A. LUFF AND SONS, Coombe Court Nurseries, Malden, Surrey. y 89

OVERSTOCKED.—Hives with Italian Hybrids, 15s. to 25s. each.—RECTOR, Stocklinch, Ilminster.

FOR SALE, small black Pug Bitch (beauty), 9 months, 15s.; or exchange Bees.—HASTIE, Auchenheath, by Hamilton, Scotland. y 90

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

CONVERSAZIONE.

At the conclusion of the Council meeting, reported on page 153 of last week's B.B.J., a short adjournment was made for light refreshments, the members assembling at six o'clock for the Conversazione, over which Mr. T. W. Cowan presided.

Amongst those present were Mrs. E. E. Ford, Mrs. J. Garner, Mrs. W. Herrod, Mrs. E. F. Kettlewell, Mrs. Illingworth, Mrs. Stuart Russell, Mrs. Mason, Miss Bunes, Miss L. M. Carr, Miss Baizley, Miss Garner, Miss Scott-Walker, Miss Smiles, Colonel H. J. O. Walker, Captain F. Sitwell, Dr. T. S. Elliot, Messrs. W. Boxwell, C. L. M. Eales, J. B. Lamb, L. Goffin, H. Jonas, E. Walker, W. F. Reid, A. G. Pugh, G. H. Skevington, W. A. Simkins, T. D. Sinfield, T. Bevan, T. W. White, G. Hepburn, W. E. Hamlin, F. B. White, J. Smallwood, A. Richards, H. Edwards, A. Willmot, C. H. Bocock, O. R. Frankenstein, C. Dunn-Gardner, J. Turner, N. S. Toms, L. McN. Stewart, R. Lee, J. E. Smiles, G. W. Judge, J. C. Mason, H. Brice, L. Illingworth, A. W. Salmon, R. W. Furse, G. H. Sander, V. E. Shaw, E. Watson, H. P. Perkins, L. S. Crawshaw, G. W. Avery, F. W. Watts, E. B. Barlonis, and W. Herrod (secretary).

Mr. Cowan, speaking from the chair, said that he welcomed all those present that evening, and he was glad to see so many before him. They had two subjects for consideration, both very interesting ones, and several inventions and articles of interest would be brought before them. Without further remarks at present, he would call upon Colonel Walker to introduce the subject of "Honey-dew."

Colonel Walker, in introducing the subject, said:

I ought perhaps to begin with an apology for bringing forward the topic of honey-dew so soon after last year's disastrous season. It may seem unkind, at a time when so many of my fellow bee-keepers, not only in our islands but in the United States and all over the Continent, have hardly yet ceased from troubling their consciences and the editors of their respective bee-journals, to tell them how best to dispose of mud-coloured extracted honey and undesirable sections. Still, as the sick man seldom shrinks from a discussion of his ailments, I trust that in this instance the interest aroused may be in fair proportion to the universality of the trouble.

The ultimate origin of honey-dew is beyond all question vegetable juice or sap. As to what happens to this juice before it is gathered by the honey-bee there is some dispute. Some naturalists believe that under certain conditions, which cannot be termed healthy, there is a partly saccharine exudation from the leaves of a limited number of trees and plants. Again, all entomologists are aware that aphides, or, in plain English, plant-lice, feed copiously on the sap of the subjects infested by them, and that they eject or otherwise get rid of the superfluous fluid in various ways. Optimistic bee-keepers persuade themselves that the hive-bee collects saccharine matter from the leaves without an intermediary, or at the worst that what they gather may be in part a secretion of the aphis. Pessimists—amongst whom the evidence compels me to rank myself—assert that practically all the honey-dew brought in by our bees has passed through the body of plant-lice or other minute sap-sucking insects.

Last November there appeared in the BRITISH BEE JOURNAL an article on honey-dew by "D. M. M.," a fluent writer on every branch of bee-keeping, who has the enviable quality of being always bright and interesting. And if this time he has not been quite accurate, it must be that for once his optimism has led him astray. Mr. Macdonald maintains that aphides suck up already-exuded leaf-juice; but the evidence is against him. These insects are essentially leaf-borers. They have no tongue; only three lancets in a three-jointed sheath. Observation has shown that as soon as the young aphis is born it plunges its lancets into the leaf as surely as the young bee just emerged makes for a neighbouring honey-cell. Plant-lice do not attack diseased vegetation; they bring disease where all was healthy. Remove them skilfully and the plant, if not too far gone, resumes its healthy condition. Every winter millions of eggs in which the embryo insect awaits the tender leaf are hidden in the sheaths of rose-buds and in the crevices of the buds and bark of many trees. As soon as a marvellously speedy increase has made the colonies too crowded, and especially when the leaves, having lost their sap, curl up and become distasteful, the next offspring produced passes into the pupal state. Not till emergence has been effected can a winged mother fly off in search of fresh trees and pastures new. Leaves with a clammy surface will have no attraction for her. She will drop her brood upon fresh, healthy foliage, where, if wingless, the young plant-lice will remain, and be found mainly upon the under-surface of the leaves on which they feed.

The beautiful coloured plates and anatomical drawings in Mr. Buckton's four-volume monograph on the British Aphides, from which much of my information is derived, show nearly 150 varieties. Some

of these feed on leaves, some on the bark of trees, some, again, on their roots. All plant-lice possess lancets, and, as far as is known to science, feed themselves exclusively by means of them.

The aphis possesses nothing in the nature of a honey-sac. Its narrow gullet widens into one rather long stomach, usually charged with a pulpy mass. From this proceeds, in the ordinary way, an alimentary tube leading by a rather broader rectum to the anus. The effete matter arising from the sap copiously consumed passes off in the form of a clear liquid, which has been found to consist principally of cane sugar. How far this must be considered excremental and how far a secretion from the alimentary canal is still unsettled. But according to the latest scientific opinion it is the sole source of aphidian honey-dew. The fluid collects at the point of the anus in drops. These, should no ant be in waiting to remove them, the insect projects to some distance by a kind of jerk, so that they naturally fall upon the surface of the adjacent foliage below. The discharge can be produced artificially by gently stroking the abdomen of a well-fed aphis with a bristle.

By means of a peculiar pair of organs called cornicles, siphuncles, i.e., little siphons, or nectaries, another discharge of fluid matter, partly, I believe, saccharine, is effected. These are horny, irregularly-shaped tubes projecting externally from the fifth or sixth ring—opinions here differ—of the abdomen, their base nearly corresponding with the upper part of the rectum. They open directly into the body cavity, but have no direct communication with the stomach or intestines. The liquid that may be seen passing through them is largely charged with oily globules, which have the quality of crystallising in a manner suggestive of some fatty acid. Usually the drops that form are got rid of in the same way as those from the anus. Should the oily globules accumulate and crystallisation take place within the cornicles the insect dies, and its whole body, says Buckton, passes into a semi-crystalline condition, partly fatty and partly saccharine.

Mr. Macdonald's pronouncement that the presence of aphides is the result of honey-dew, and not it of them, strikes me as fantastic, and I cannot find any scientific evidence or opinion in support of it. Mr. Buckton and, as far as I can learn, the great majority of entomologists believe that the honey-dew gathered by bees from the surface of leaves is of aphidian origin. There are, undoubtedly, what may be termed voluntary secretions produced by certain plants and shrubs, and possibly by trees, although I am not aware of such, in order to protect their blossoms and reproductive organs from the assaults of ants and other small marauders. But when, for no conceivable advantage to itself and, on the contrary, at a loss of much precious sap, a tree is said to cover its leaves promiscuously with a glutinous secretion, choking the pores by which they breathe, we have before us a state of disease—a phenomenon that our sense, fortified by experience, assures us must be quite exceptional. Wherever honey-dew is found, the presumption in favour of direct insect agency—and, in this country, that of aphides—is so strong that anyone objecting to it may fairly be called upon in every instance to prove his case. From top to bottom the tree should be free from plant-lice or the trace of their former presence there. When the winged mothers leave their colonies some perhaps travel but a little way. Others, wafted upwards on a light breeze, are conveyed to a great distance. Clouds of them have been observed in the air. Reaching a new district, they may at once attract attention, or, alighting on the tops of trees, remain unseen, when the only hint of their presence will be the shine upon the surface of the lower foliage, and perhaps the contented hum of gathering bees amongst the boughs above. In fine weather, even above the new colonies, the topmost leaves are sometimes sticky with the fluid voided by these insects while on the wing. Thus ejected, it has been caught upon sheets of glass and analysed. Nearly every fruit and forest tree has its particular aphis; some have several kinds. The currant has three; the elm four; the oak at least six. The birch, the willow, and the fir are each of them infested by at least eight different varieties.

The exact nature of the fluids discharged by aphides, or their manner of discharging them, although of great physiological interest, is not of much moment to the bee-keeper. That honey-dew should have passed through the body of so small an insect does not, to my mind, make it particularly distasteful. Buckton's crystallised aphis might well be reckoned a dainty. It is after the leaf-juice has left the insect that trouble begins. Pliny, who, like his contemporaries, drew no distinction between honey and honey-dew, passionately exclaims: "Oh, that we had it so pure, so clear, and so natural as when it descended first, whether it be from sky, from star, or from the air!" And the modern bee-keeper murmurs: "If my bees must bring in honey-dew, oh that it had occurred to them to tap it straight from the aphis as the ants do!" Observers agree that when first ejected the fluid is limpid, and to the taste sweet and not disagreeable. How, then, are we to account for the extraordinary variations that it presents to us when harvested, ranging in

colour from a dull yellowish-brown to almost black, and in flavour from sickly sweet to depths of nauseousness that only those who have conscientiously judged the dark extracted honey at a big country show in a bad season can realise?

A black fungoid growth, as Mr. Macdonald points out, spreads itself over leaves that are coated with honey-dew, and to that he attributes the dark colour. It may be so; I have my doubts. On our lawn grows a great Turkey oak, the leaves of which are in most summers clammy with honey-dew. So freely is it shed from above that we are often unable to take advantage of the tree's welcome shade. No chairs can be placed within the zone of aphis fire. As the summer goes on the leaves become blackened, presumably from the fungus. Bees, coming, as I suppose, from my apiary, work upon the oak, yet when extracting from honey-dewed combs I have never seen a colour that could possibly, without some chemical or other peculiar change, be derived from the sooty fungus. My honey may be muddy, but never really dark. Bees will not always reject an attractive fluid on account of its having been artificially coloured, but we do not know how far their power extends of rejecting the added colouring matter while imbibing. They may be able to avoid imbibing the sooty fungus.

In the course of a few hours the exposed surface of a sticky leaf collects from the air a considerable deposit of the miscellaneous minute débris with which even in the country it is laden. A few chimneys will discharge an amazing number of carbonised particles, and these may travel in suspension for miles. I imagine that the darkest honey-dewed honey comes from the neighbourhood of towns. I should like to hear opinions on that. Also, if anyone present possesses an apiary in an open and treeless situation, so that he is probably not inconvenienced by honey-dew, I should like to know whether the honey harvested last season was darker than usual. I have been told that this was so in some instances without the agency of honey-dew. If so, it would be very interesting to ascertain the cause. Little is known of the reasons for colour variation in honey. I suggest that some bee-keeper who practises micro-photography should prepare slides showing films of various honey-dews; of the fungus-loaded product of a leaf; and of pure honey, of which some drops have been exposed on glass slides for a few hours in fine weather and reasonably protected. The comparisons afforded might be instructive.

Variations both in colour and flavour may be due to the fact that the aphis family feeds on many kinds of trees and plants, and, again, on various portions of these, as, for instance, on the bark of the willow and the oak. Salicine has been detected in the juices of an aphis that feeds on willow-bark, and in the same way tannin from the oak and other strongly-tasting substances, well known to chemists as obtainable from vegetation, may eventually be found lurking in the honey-jar. This branch of my subject, however, I must leave to those better qualified to deal with it.

So far, on account of their being undoubtedly the chief source of honey-dew in this country, I have discussed only aphides. There are other minute leaf-piercing insects which produce it in much the same way; notably the *Psyllidæ*, called "springing plant-lice" from their habit of jumping, and the *Coccidæ*, scale-insects, or mealy-bugs. The first of these, in North America I believe, produces an astounding amount of honey-dew. The writer of the section on insects in the "Cambridge Natural History," Dr. Sharp, states that he observed *Bombi* gathering from a variety of these plant-lice established on a blackthorn in the New Forest. I do not know whether *Coccidæ* produce honey-dew in this country. The manna mentioned in the Book of Exodus, says Dr. Sharp, is probably that honey-dew secreted by a coccus now called *Gossyparia manifera*, which lives on the tamarisk in many places in the Mediterranean basin. It is known locally as the "manna of Sinai," and is so plentifully secreted that the Arabs are able to pick it up from the ground to eat with their bread. Some species infest the spruce fir. Dr. Burton Gates, of the Bureau of Entomology in Washington, writing to the *Journal of Economic Entomology* in December last, records having observed bees gathering a liberal supply of honey-dew from a European species of scale-insect on these trees in Massachusetts. Our bees work freely on fir-trees, and possibly gather honey from this source, which may or may not have a peculiar flavour.

The only way to avoid harvesting honey-dew is to remove the uncontaminated combs as soon as its arrival is detected. I have generally seen it brought in dense and glutinous. This year, the worst I have known for honey-dew, I shook from some shallow frames a newly-stored liquid that had the appearance of dirty water, and, indeed, tasted like it. Something can be done at extracting-time by rejecting combs much affected. There is no remedy for sections. In either case, unless the honey-dew is rank only a fastidious consumer would object to a slight blend of it. I have friends who really seem to like honey-dew, and, if the colour is not offensive, I see no reason why their simple taste should be discouraged, so long as they know exactly what they are buying. Selling to the trade is another matter.

That this product should be a dangerous winter food for bees has always appeared to me a hard saying. Notwithstanding that with us poor humans what to eat, what to drink, and what to avoid has long been a proverbial difficulty, it is generally admitted that in the lower scale of creation instinct solves the problem. Amongst such animals *Apis mellifica* ranks as supremely intelligent. Why, then, does she crowd the combs with a dangerous food, even when flower-honey is fairly plentiful? Systematic inquiry in the United States has shown that the danger exists only in the colder regions of North America, and I believe that in most parts of Great Britain ordinary honey-dew may be quite safely left in the hive or fed to the bees for winter use. I never trouble myself about its being there, nor would I scruple to give it as food, knowing that my bees are seldom for many days without the chance of flying.

Mr. Macdonald's advice that honey-dew should be used to produce bees and wax in spring or summer is excellent. Brown sugar produces remarkably white comb, and the same may be expected from dark honey-dew. On no account should this disgusting product be sold to a consumer, or to anyone who is likely to offer it for sale as table honey. In most of the North American States a Pure Food Law, happily for the people, now exists. What percentage of honey-dew constitutes an impure food is as yet unsettled. Twenty per cent. has been mentioned as the limit; but in view of the varying character of honey-dew I do not see how a limit of this kind can be fixed. Since we have no such law the British bee-keeper must settle the matter for himself. Let him remember this: In spite of much foreign competition our honey still holds its own by reason of two notable merits—its natural excellence, and the care and cleanliness with which it is put upon the market. To jeopardise this supremacy for the sake of a passing advantage would be selfish folly.

(Continued next week.)

SOMERSETSHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of the S.B.K.A. was held at Stuckey's Restaurant, Bristol, on March 31, at 4 p.m.

There was a capital attendance, about fifty members from different parts of the county being present. In opening the proceedings, Lieut.-Colonel Jolly, the chairman, voiced the regret of all present that Mr. Cowan had found it impossible to attend owing to a prior engagement.

The minutes and balance-sheet having been read and confirmed, the secretary (Mr. L. E. Snelgrove) presented the report for 1909, which stated that marked progress had been made during the year. The balance-sheet showed that a total of £64 6s. 7d. had passed through the hands of the treasurer, and there remained a cash balance in hand of £2 19s. 10d. These amounts would have been increased by more than £2 had one of the branch accounts been received in time to be incorporated in the general account. A noteworthy feature of the expenditure was that the amounts spent on practical expert work had risen from £20 15s. 5d. to £27 16s. 4d. Almost all the local branches showed an increase of membership, in spite of the very discouraging honey-season. In addition to this, four new branches were at present being formed. It was estimated, therefore, that the membership for 1910 would be about 320, as compared with 250 for last year. At Wells the association had secured the services of Mr. L. Bigg-Wither, a first-class expert. He had undertaken to become local secretary and expert, and has already enrolled a number of new members. At Wrington the Rev. Ambrose Veevers had established what promises to become a strong branch of the association. He had been seconded by Mr. S. Jordan, whose recent lantern lectures on behalf of the Somerset County Council were widely appreciated. At Castle Cary Mr. R. Litman was enrolling members for the new branch, of which he would be the local secretary and expert. The secretary was in negotiation with regard to the formation of a new branch at Chard, with Mr. W. H. Wyatt as local secretary. References were also made to the successful efforts of other local secretaries during the year. The experts had paid 370 visits, and had examined about 1,000 hives. Of these 102, or about 10 per cent., were reported as diseased. From all the districts the season was reported as poor. In spite of the drawbacks of the season, however, a large amount of excellent honey was exhibited at the annual show, which was held at Brislington, in conjunction with that of the North-East Somerset Farmers' Club. The reports from the local associations showed that foreign honey is sold to a limited extent in the small towns, but that a considerable amount was still sold in Bristol. It was desirable that every local branch should have its president, who should be a vice-president of the county association. It was hoped that more local branch meetings would be held during the coming year, and that, as far as possible, the secretaries would arrange the local programmes for the year. Seven candidates entered for the third-class expert's certificate of the B.B.K.A. The

following were successful: Messrs. H. Grist, W. G. Kemp, W. Randall, and H. Litman.

After expressing approval of the report, the members adjourned for tea.

On the resumption of business the usual votes of thanks were passed, and the officers re-elected *en bloc* with the following additions:—Vice-presidents: Surgeon-General Sir John Woodfryes, Colonel H. Blagrove, and Major Steward; assistant hon. secretary, Mr. L. Bigg-Wither; treasurer, Mr. W. Withyeombe.

A long discussion then ensued on the reorganisation scheme of the B.B.K.A., with the result that the meeting finally voted unanimously in favour of it.

The arrangements for the annual honey show were left to the Finance Committee.

A motion in favour of foul-brood legislation was carried.

A vote of thanks to the chairman for presiding brought a successful meeting to a close.—L. F. Snelgrove, Hon. Sec.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7802.] The weather is not of the kind which rejoices the heart of the bee-keeper. We have had a succession of sunless days, interspersed with cold storms of rain and hail, which has kept the bees within their hives, but every hour when the sun has deigned to shine there has been a big exodus to the woods in quest of the needful pollen and honey. With enlarging brood-nests extra food is required, and if the weather will not allow of this being gathered in in the natural way feeding should be continued till more settled, warmer weather prevails.

Do not forget to order needful bee-goods in good time; another week, and we shall have passed May Day, and in early districts where fruit-blossom abounds supers should be on the hives ready to take advantage of the early honey-flow. As the season advances, a frame with a full sheet of wired foundation may be placed in the centre of the brood-nest and a bottle of syrup given at the same time; this only applies to strong stocks. By this plan the brood-combs are gradually renewed. I generally give two such frames to each stock every season, marking the old combs that I intend to replace when I go through the spring-cleaning process. These new combs are generally filled with brood, and increase the productiveness of the stocks if you insert them so as to give time for the young bees to hatch out a few days before your honey-flow is due.

Another point which I would impress upon bee-keepers is to study your district. Know when your honey-flow is to be expected, and get your apiary into the pink of condition to take advantage of it. Each district varies, and the cultivation of the land makes a considerable difference in the time of the honey-flow. I do not think present-day farming is as favourable for bee-keepers as the methods in vogue some twenty-five years ago. Crops of grass for hay are of a vastly different nature from those planted by our fathers. In their day white clover was grown largely with ryegrass; now it is the broad or red clover in nearly every instance. Very little trifolium is grown now, which makes one regret the good patches of crimson blossoms which provided early forage for our bees.

Foul-brood Legislation (page 145, B.B.J., April 14).—Mr. Avery knows that it is impossible to show both sides of the point regarding the necessity for a Foul Brood Act. He must admit that bee-keeping is a very old industry; at least we read of Jacob sending a present of honey to the Egyptian king—from which it would appear that the old Patriarch kept bees. But at any rate it has been left to the present generation of bee-keepers to spread bee-diseases broadcast throughout the world, I think I may say with truth, as by the side of Mr. Avery's letter is Dr. Zander's showing that the new disease, *Nosema apis*, has reached the Antipodes; and also it is the present generation of bee-keepers (shall I say interested members of the craft?) who are praying to the Government for powers to endeavour to undo the mischief that has been done in the past. For "the high hopes of the Canadian Act" I must refer interested bee-keepers to the Canadian and American bee-journals. Even Mr. Avery does not deny that there is still plenty of foul brood in Canada. If my memory serves me right, I believe the estimate is some three or four times what Mr. Avery says is the average in Cumberland; and if so much has been accomplished by the Cumberland Association during the past few years, why ask for arbitrary powers?

I trust the Hon. Sec. of the Hartley Wintney Bee-keepers' Association, if a reader of our Journal, will give us fuller information, *i.e.*, how long afterwards were the bees in Herefordshire manipulated, and if the same clothes were worn. From the context I should not expect it

was on the same day. I shall expect a spread of the new disease (*Nosema apis*) if "experts" are allowed to go from apiary to apiary. Also, as regards the *cure* of foul brood, will Mr. Avery or anyone else give a radical cure for this disease short of the fire?—W. Woodley, Beedon, Newbury.

FOUL-BROOD LEGISLATION.

[7803.] Mr. Green seems to think that he has been rather severely criticised in the B.B.J., and replies in the issue for April 14 (7789). There is small wonder he is criticised, considering the extraordinary light in which he sees things.

That old bogey, the infringement of the liberty of the subject, cast such a shadow that he feared the gloom of a prison-cell. Now he would have us believe that utter darkness is falling on the land. The time, the energies, the talents of those who have laboured for the good of bee-keepers, the fruit of thirty years' circulation of the B.B.J., the eloquence of lecturers, the financial help given—all are wasted and blotted out, for *he* says (what no one else ever has said or ever would say) that "British bee-keepers are unfit to be entrusted with the care of bees." Where, or how, he has got hold of such an idea, or what warrant he has for such a sweeping assertion, it is hard to imagine. The cloud that prematurely darkened his prison-cell must have grown in density.

Then, having quite missed the point of Mr. Smallwood's letter, he proceeds to give us his alternative and tell us how associations ought to work. "If there is one thing," he says, "these associations ought to do, it is to keep their respective areas free from foul brood." Is not this the very thing progressive associations are trying to do? Finally, Mr. Green seems to think he has scored off Mr. Avery, and refers his readers to page 86. There Mr. Avery stated that the Cumberland B.K.A. had reduced foul brood from 60 per cent. to 7 per cent., "and did this without law, police, or magistrate," concludes Mr. Green. It suits Mr. Green only to quote as far as this, but if readers will kindly read a little further on, they will also find on page 86: "Early in the career of the Cumberland B.K.A. it was recognised that compulsory power of inspection would be the only means of reaching a certain section of the bee-keepers, and each season convinces us more and more of the necessity for this in order to protect our pursuit from the ignorance and stupidity of those who will not be persuaded, both in the county and further afield."

This 7 per cent. represents the rocks we want to remove, and which we never can remove till we have the law behind us. It represents the obstinate, selfish (not always ignorant) bee-keeper who, year after year, not only prevents a perfectly clean bill of health being reported by any association, but, far worse, wastes the time and money of his unfortunate neighbours in replacing bees and appliances and spoiling their profits.

If ever an association was justified in asking for legislation to give it the power to complete the good work begun by voluntary effort, but brought to a full stop by wilfulness, I think the Cumberland B.K.A. is. Mr. Green, far from justifying the action of anti-legislators, has brought out very clearly how absolutely necessary and urgent is the need for legislation. Voluntary effort has done its best, and in this particular case has done better than in most counties; but now voluntary effort can do no more, and it is time the law came to its aid. Why, oh why can some bee-keepers not see beyond their own hives, or realise what loss and discouragement, one might add discredit, they bring to the brotherhood of bee-keepers?—F. Sitwell, Yearle, Wooler.

[7804.] I have been much interested in the many letters appearing on the subject of foul-brood legislation, and should like, through your Journal, to express my views on the same. I may say I am greatly in favour of a Foul Brood Bill, and hope, before many months have gone by, that it will have become law. Mr. Green (page 146, B.B.J., April 14) seems to think that county associations can practically stamp out the disease, but what about the bee-keeper who refuses to join an association? In my opinion this is where the danger lies. In another letter, on page 147 of the same issue, "Flos, Salisbury," says even if there is only one member of an association in a village and the expert pays him a visit, he might also make a friendly call on any neighbouring bee-keeper. This probably would do good to a certain extent, but I myself know several bee-keepers who would dare anybody to examine their hives, and the law is the only thing which can deal with such people. I was told of the following case the other day, an example of what harm can be done by foul brood, by a bee-keeper who used to keep a dozen hives. A neighbour kept several skeps, and did not take the trouble to look after them, the result being a very bad attack of foul brood among his bees. Instead of destroying them or trying to cure them he left them alone, and in a week or two all were dead. My informant, whose apiary was close by, also caught the disease, and in a short time all his stocks were dead also. This shows, I think, that some law should be made to compel bee-keepers to keep their

hives in a proper state. In "Notes by the Way" (page 137, April 7) Mr. Woodley seems to think the skep will be a stumbling-block to the expert, but I agree with Mr. Avery (page 145), who says that no expert can be considered worthy of his position unless he can tell whether a skep is in a healthy or unhealthy condition. I have been fortunate enough to have never had disease of any description in my apiary through all my ten years' experience of bee-keeping, but all the same, if disease did break out, I am sure that I should be only too glad to welcome any Government expert and have his advice on the same.—JULIAN E. LOCKWOOD, Hunstanton.

SPREADING INFECTION.

[7805.] With regard to Mr. G. W. Avery's remarks (B.B.J., April 14, page 145) upon spreading infection, I quite agree that anyone who goes habitually amongst bees cannot be too careful to disinfect his clothing. In the case to which he refers, however, of "a person actually handling stocks of bees known to be diseased, who then *without any precautions* travelled into another county and introduced the disease," may I say that precautions were, and are, always taken by that person? All smokers, spatulas, &c., are put into a carbolic bath, washing overalls are worn, and the garment beneath is sprinkled with a solution of carbolic acid and water; but in this climate it is not always possible to wear entirely clothing which can be boiled or burnt—the only *certain* methods of destroying germs.—M. MILLARD, Hartley Wintney.

BEE-KEEPERS' ASSOCIATIONS.

A SUGGESTION.

[7806.] Since my letter appeared in the B.B.J. (7758, March 3, page 89), I have been deluged with letters from all parts inquiring for particulars of the syllabus, rules, &c., sent out by the Croydon B.K.A. We have done our best to supply each inquirer with a copy and any other information required. This leads me to believe that an annual conference of secretaries and officials is more than ever a necessity. Many bee-keepers' associations have, I fear, become stereotyped in their methods, judging from the tone of some of my correspondents, and such a conference, held, say, in London, each year would greatly assist the officials of the various associations in obtaining new ideas, and would increase the interest and enthusiasm of the members. If such a meeting could be arranged, I suggest each association bear part of any expenses incurred. We should then have an opportunity of meeting some of your able contributors whom we only know through the JOURNAL, and the friendly feeling among the craft would be increased by personal knowledge, and undoubtedly would tend to help bee-keeping on in many ways.—A. WAKERELL, 21, Mansfield Road, Croydon.

DESTROYING WASPS.

[7807.] In reply to "J. T." (7801), I should like to ask first, who gave us the wasps? The coloured bee-keepers of Zululand regard it as a good omen if wasps or hornets consent to build near the bees. I am only young in bee-keeping, but I hope to find a better remedy than killing. "From the mouths of babes," &c.—T. A. BAKER, JUN., Kingsley House, Tarvin, Cheshire.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Laying Workers.—Mr. York says: "If you find a queen-cell with more than a single egg in it you may be certain it is the work of laying workers. Sometimes you will find half a dozen or a dozen eggs in a queen-cell, some of them generally looking not plump, but withered. You may be sure no fertile queen was ever guilty of such work."

Joining Associations.—"One dollar pays the annual fee not only of the State Bee-keepers' Society but also of the National Association for a period of one year. That is cheap. Members also receive a cloth-bound copy of the annual report, including the reports of three conventions." The National is also ready to stand by its members if trouble starts, and in this way acts somewhat as an insurance company. By the way, the annual convention peregrinates, and changes to a new centre at each successive meeting. Moreover, the officials go on propagandist tours, and the president and general manager deliver addresses at various State gatherings.

Introducing Queens.—"What is a simple and reasonably safe method of introducing queens?" was asked at a recent convention, and President York reported success in nearly all cases by "drowning" the queen, or holding her under water, and then dropping her into the hive, having removed the old queen the day before.

Wintering.—Reports in *Gleanings* are, on the whole, rather favourable, although indications are here and there shown that the mortality will be very heavy where the bees were wintered mainly on honey-dew. Where, however, the colonies were fed with sugar-syrup, and the honey-dew was not tapped at too early a date, matters are progressing favourably. The

interest shown in this subject of honey-dew is very marked, but the last word has not yet been written. A shield has two sides.

Syrup.—"Sugar-syrup fed thick, even though late in the season, has again demonstrated its ability to bring bees through safely to spring. It is clearly proved that a thick sugar-syrup is better than a thin one for winter feeding. Slow feeding in the fall exhausts the bees; feeding thick syrup practically in one dose does not exhaust the vitality of a colony, nor unduly excite it like repeated doses." The editor considers syrup *two and a half to one* the best for autumn feeding. Sealed and absorbent covers got a trial side by side at Medina, and the finding is: "There was very little difference to be noticed between colonies packed under sealed covers and those under absorbents."

One for Blacks.—The editor of the *Review* records that at the New York convention inspectors stated with emphasis that it was simply impossible to cure black brood with black bees, and then follows the inevitable advice, "Get Italians." Alongside of this I am pleased to place the experience of Swiss bee-keepers. The fact is that it is in Southern Switzerland, where the Italian bee is indigenous, that foul brood is most extensively found. Not only is the disease more prevalent among Italians, but it is more *virulent*. The native race resists the disease much better than the much-belauded Ligurians.

A Smart Act.—Mr. N. K. Morrison, writing from California, says: "Glucose comes here by the car-load from Chicago—a distance of 2,500 miles. Californians send their splendid honey east, and, after paying the freight both ways, get the price of glucose for their honey. And yet they say the people here are smart." It looks like a silly act if they really exchange splendid honey for such deleterious trash. At home some of our people buy the most inferior foreign mixtures at the price of good home-produced honey of the best and purest. Silly!

Queen-rearing.—Mr. Doolittle's queens are all reared in strong colonies in upper stories over a queen-excluder, with the exception of those started in early spring and in late autumn.

Acquiring Knowledge.—A prominent American writer has this to say of how he has acquired his bee-wisdom: "I have picked up little things here and there for many years, and by saving every little item that proved to be in advance of what I already had, and applying them together with what I could study out myself, eventually gave me success. Indeed, there has hardly been a writer in the past for our bee-papers from whom I have not gained some light. It is the 'littles' of the past, coming from the thousands who have engaged in the pursuit, that have made the 'mickle' of the present." These are words of great wisdom. I think I never yet read a bee-book or a single issue of a bee-newspaper which did not contain some small hint, idea, or information well worth the price of the paper. Only the bee-keeper who is ever learning is advancing in the craft; the man who thinks he is already all-wise is a fossil.

Queries and Replies.

[4013.] *A Beginner's Queries.*—When in the North a year ago I happened to pick up a copy of the "British Bee-keepers' Guide Book," which interested me so much that I determined to start bee-keeping. This spring I purchased three stocks in frame-hives from a local bee-keeper, but after hearing that the bees of the late owner had died off, I came to the conclusion that the hives were infected with foul brood. The combs were a dark colour, with rotted dead brood in odd cells, the appearance of the combs being exactly like the photograph given in the "Guide Book." I followed out the treatment detailed scrupulously, destroying bees, &c., as directed, and then stocked two of the hives with bees which I purchased in skeps, one lot being very strong and one rather weak. A fortnight ago I placed them over hives as instructed for transferring. The weaker lot are showing no signs of breeding, except a few odd cells, so I am afraid I shall lose them also. I should like to get them down into the hives, so that I can take away from the strong lot some brood to help the weaker stock. I am feeding on medicated candy and syrup as directed, and should like to know: 1. Will it be possible to keep bees healthy in the hives by continually feeding on medicated food? 2. Is it possible for one having no experience to drive bees into hives—I am not frightened of them? 3. I should like to start a new hive of "bright Goldens," only suppose I had better see that mine, which I take to be dark British, do well first? Or I could keep them 1½ miles from others. 4. Can you tell me of anyone within a few miles who might advise me in starting with bees, as I have read in the JOURNAL that there is a good feeling among bee-keepers generally, and that it is to the benefit of all to keep stocks healthy?—C. F. K., Godalming.

REPLY.—1. It is quite possible to keep bees healthy by proper attention, *i.e.*, cleanliness and proper food when required; in your case it will be well to medicate

all food used. You should have waited a little longer before putting the skeps over the frame-hives. The weather is hardly warm enough for that at present, and the colonies will not, as a rule, be strong enough to go down straight away, which they will do if you wait until the skep is quite full of bees before placing in position over frames. It would also be advisable to scorch the inside of the frame-hives with a painter's spirit lamp before using again for bees. 2. It is possible, but it would be much better if you saw the operation performed by someone else first. 3. It will be much better if you stick to the native bee. 4. We do not know of anyone in your neighbourhood, but any time you are in London we shall be pleased to have a chat with you, or you might join the Surrey B.K.A. The secretary (Mr. F. B. White, Marden House, Redhill) would be able, no doubt, to put you in touch with a local expert.

[4014.] *Dwindling Stocks.*—At Easter I bought two stocks in wooden hives. The bees covered about two frames in each hive. A book of instructions was sent with them, and as they looked weak and a great quantity were dead I made them some syrup, according to book, and they clustered. I fed them with about 2 lb. or 2½ lb. of syrup, but I now find they are still weak, and many more are dying. I should like to know: 1. Am I giving them sufficient food? 2. Will the bees go out in search of food if I keep the feeder on? 3. Do you know anyone in our district who might give me a call? 4. I have no empty frame; how can I prevent the bees moving away from the cluster? 5. How shall I know if they have a fertile queen?—H. B., Birmingham.

REPLY.—1. Yes. 2. Yes, when the weather is favourable. 3. Your best plan will be to join the Warwickshire B.K.A. (hon. sec., Mr. J. Noble-Bower, Knowle, Warwickshire), who will send the expert to call on you if applied to. 4. You should contract the frames with a division-board. 5. By the presence of brood in the hive. If none is seen, the stock may need requeening. It is difficult to say exactly what is wrong; the bees may be diseased. If you send us a piece of comb containing brood (enclosed in a tin box) we shall be able to advise you on this point.

Echoes from the Hives.

You will be pleased to hear that bees are flying very strong, and covering eight frames already. Should the weather continue good, swarms should be early. There is a splendid supply of spring blossom, and my garden is a veritable nest of bees.—M. S., Hunts.

TRADE CATALOGUE RECEIVED.

W. P. MEADOWS (*Syston, near Leicester*) sends an illustrated catalogue of bee-appliances and tin ware. Amongst the novelties are four-, six-, and eight-frame "Cowan" honey-extractors, Gray's uncapping-tray, and a new wax-extractor. The catalogue also contains particulars of frames and lights suitable for use in French gardening.

Notices to Correspondents.

*** Can any reader inform "J. L." where he can get post-cards printed with picture of his apiary, and paper bags with bee-hive and name and address, at a cheap rate per 1,000?

B. B. (Ramsgate).—*Stimulative Feeding.*—1. If your bees have two or three frames of sealed stores they do not require feeding, and would probably store the syrup you give them in cells which could be more profitably used in rearing brood. 2. As your locality is a windy one, you should leave on the lift as shown on page 103 of the "Guide Book." You can then turn up the quilt sufficiently for the purpose of uncapping some of the cells without fear of chilling the brood. You can also ascertain if the bees are short of stores in the same way. There is no necessity for opening hives and exposing the brood in windy weather, as you can do all that is required at this time of the year in the way mentioned.

C. D. (Arran).—*Moving Bees.*—1. One side of angle-plate should overlap eke and project above, so that the body-box placed on the eke can be screwed down securely. A piece of hoop-iron answers the purpose very well, but such angle-plates are easily procurable at any ironmonger's. 2. If you have frames with metal ends and use the eke, you will not require the rack. The one used is shown on page 41 of the "Guide Book," and is placed on floorboard reversed to prevent the frames from moving. 3. There is no difficulty in securing "W. B. C." hives on ekes. The outer case is put on, and the space between it and body-box can be stuffed with paper for better security. The bees are packed and hives corded for transit as shown on pages 118 and 119 of the nineteenth edition of the "Guide Book." 4. The frames with perforated zinc are not sufficient without securing the hives so that they do not shift on the journey. 5. The proper way is to have lower story, shallow lift, and roof; this just gives sufficient space for packing. 6. We know of no insurance company taking risk to hired horses and men involved in the re-

moval, but probably some of the companies who take insurances under the Employers' Liability Act might entertain such a proposal. If bees are properly packed there is really no risk.

RADNORIAN (Presteign).—*Bees Fighting.*—1. No doubt the fighting was caused, through your operating in the middle of the day and failing to reduce the entrance, by robber-bees attacking the weak colony. 2. There does not appear to be anything the matter with the dead bees, and it would be better to unite what remain with another colony already in a frame-hive. 3. As you do not know the age of either queen, you must keep the one which appears to be the better and more prolific. 4. Syrup will keep from one season to another if properly made and put into well-corked bottles, and candy can be kept in a dry place. 5. The usual charge is 1s. per hive for the season.

H. L. (New Forest).—*Transferring Bees from Skeps.*—If bees are expected to transfer themselves to frame-hives from skeps, these should be put on early in the season, generally in April if weather is warm. Late in the summer the bees will not build combs, as their numbers are diminishing instead of increasing, and they do not require the extra room. If the frame-hives are not damp you can leave the skeps on, and if there are plenty of bees they will in due time take possession of the lower hive.

GLEN (Glenlivet).—*Drone-breeding Queen.*—1. It is evident that the Italian queen has become a drone-breeder, either through age or from her incapacity to fertilise the eggs through injury or other cause. 2. Yes, such drones are quite able to fertilise.

W. H. (Warwick).—*Introducing Queen.*—1. By introducing a new queen you would save much time, but you should only do so if there are plenty of workers in the hive. 2. You can also, if you like, rear a queen from brood from one of your other hives, but it would be three weeks before you could expect the queen to commence laying.

J. K. (Huntly).—*Dead Bees Thrown Out.*—We cannot see anything wrong with the bees. Probably it is the usual spring clearing out of those which have died during the winter. It might be that they died a little while ago from starvation, and it would be advisable to see to the food-supply.

NEW BEGINNER (Anglesey).—*Creosote as a Disinfectant.*—You can use creosote on the legs and under side of floorboard, but it must not be used inside the hive, as the strong odour is very objectionable to bees, and might cause them to forsake the hive.

W. J. (Forfar).—*Quality of Honey.*—The sample labelled "Asquith" is a heather-mixture. Sample "Balfour" has been burnt when reliquefying, but we should say it is clover honey.

A. W. R. (Poole).—*Making Artificial Swarm.*—It is too early yet for this. Put a frame filled with full sheets of foundation on outside of brood-nest to keep the bees going, and wait at least another fortnight or three weeks before making an artificial swarm.

J. L. (Hunstanton).—*Removing Bees from Wall of House.*—We could only advise you fully on seeing the place where the bees are located, and knowing all the circumstances. It is too difficult an operation for a novice to undertake without help from someone experienced with bees, but any advice we can give is at your service, if you will send particulars.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

CONVERSAZIONE.

(*Continued from page* 166.)

The Chairman (Mr. Cowan), in inviting discussion, said he was sure they were all indebted to Colonel Walker for his very interesting paper, and he hoped that there would be a good discussion, as there was a good deal which might be said on both sides of the question.

Mr. E. Walker said the darkest honey-dew he ever saw came from Highgate, which could be considered near London. It was gathered about twelve years ago, in one of the worst years that was experienced in that neighbourhood.

Mr. Sander said he saw some last year that was nearly black, not quite as black as coal-tar, but very dark green, so that it appeared almost black. It came from an apiary in his own district of Bexley.

Mr. J. B. Lamb wished to compliment and thank Colonel Walker for his able paper, and expressed the hope that the reading of it and the discussion that would follow would stimulate bee-keepers to make careful observations, and—what was very important—to record those observations on paper. One of the points to be specially noted was whether this honey-dew was brought in by any particular race of bee. Simmins had found that Italian bees brought in light honey whilst other bees were bringing home honey-dew. One such statement does not establish a fact: but if a number of bee-keepers were to find that Italian bees brought home light honey and other bees darker honey, it would lead us to suppose that Italian bees had a cultivated taste. Then he thought the weather should be noticed when this honey-dew is most prevalent. Suppose we see a lime-tree with honey-dew on the leaves, the ground being dark from the drops falling, we might ask ourselves what was the weather the day or night before, and record the fact. He suggested this because the opinion was growing that honey-dew was an exudation from the leaves of trees. He admitted that he had to rank himself on the opposite side to Colonel Walker, for he thought that when there was an excessive flow of honey-dew, like that of last year and of 1898, it was not due to the existence of the aphis. Professor Pfeffer, a well-known authority on plant-structure, states definitely that the leaves of trees will give off honey-dew, this pathological phenomenon being caused when cool nights follow hot, dry days. Bonnier says that such weather interferes with transpiration, thus causing an exudation, and that there are two kinds of honey-dew—that produced by the aphis, and the true honey-dew produced by the leaves. Mr. Buckton's book on this subject was old, and knowledge thereon had advanced since it was written. In those days it was almost universally believed that the honey-dew came from two tubes on the aphis, but that idea had been quite disproved. All modern entomologists believe that the exudation from the tubes is not of a saccharine nature, which view is supported by the "Cambridge Natural History" and Sedgwick's "Text-book of Zoology." Büsgen and other well-known authorities state definitely that there is no sugar in the secretion from the honey-tubes, the honey-dew coming from the alimentary canal. He would like to mention that Mr. Cowan said in 1898 that he had seen trees producing honey-dew which were free from insects. This shows that honey-dew can exist without the agency of plant-lice. He (the speaker) had also seen leaves gathered with honey-dew on them, and had not found any aphides present. If this honey-dew were caused by plant-lice, why is it that we have an abnormal production at such rare intervals? He leaned to Professor Pfeffer's view that the exudation was from the leaves, caused by the weather—hot, dry days followed by cold nights: and he doubted if we should find evidence that aphides were responsible for the abnormal production of honey-dew.

Mr. Reid said Colonel Walker had been so thorough that it was rather difficult to add anything to what he had said. He had watched the subject closely for many years, and admitted that his own experience had been exactly opposite to that of Mr. Lamb. He had never been able to trace, either with the naked eye or by the aid of the microscope, honey-dew from the exudation of the leaves of the trees themselves. The ordinary cherry laurel secretes at the base of its leaves a sweet liquid in two little orifices that the bees and wasps are very fond of. The Jerusalem artichoke has similar orifices. These were the only instances where from personal knowledge he had found a sweet juice secreted by the leaves. He did not think it ever came from the glands on the leaves, and would like to know in what way it exudes, and what these organs are, because as a rule leaves do not exude liquids. With regard to the colour of honey-dew, he would give the facts within his own personal experience. He lived about twenty-one miles from London, and there was a certain amount of smoke, but not much. Honey-dew on the lime-trees is dark-coloured, but he must admit that he had never noticed

anything in the honey approaching the dark colour mentioned. He got the bulk of his honey from mixed sources, and chiefly lime-trees. With regard to the actual composition of honey-dew we are at a slight disadvantage, because much honey which is called honey-dew at shows cannot wholly consist of that substance. He had never been able to identify any honey as the sole produce of honey-dew. No doubt if you see your bees flying off to trees having no flowers, they may be gathering honey-dew. Many times he had caught bees and extracted the honey, but it was an extremely difficult thing to make an analysis with so small a quantity of liquid. It would be very useful if the Association could in some way make a collection of honeys that are supposed to be honey-dew. Nothing could be done in the way of research until we could get something to work upon, and he thought it would prove difficult to identify any honey as pure honey-dew. When we have a bad season it might be possible to preserve some honey for analysis, which would throw the light on the subject which we so much need. He had not seen honey-dew on lime-trees without the black appearance on the leaves. When rain washed off the honey-dew, the black material was not washed off unless we had a very heavy shower; therefore the black matter was not easily soluble.

Mr. Crawshaw said at Ilkley he had as black a sample of honey-dew as it was possible to get. Ilkley was about thirteen miles from Bradford, and was comparatively smokeless, although smoke from manufacturing towns undoubtedly drives over sometimes. When judging at a show in the North of England he saw there a sample that was even blacker than his. They (the judges) were very reluctantly obliged to disqualify it, but they were quite able to judge it as being honey-dew without subjecting it to tasting. It occurred to him that the days to which Mr. Lamb had referred were those which stop the secretion of nectar in flowers. He thought that honey-dew at the beginning was not so dark as at the end of its flow, and he imagined that the change was due to fungoid growth. The honey-dew to which he had referred just now at the show came from a country district, a village, away from the towns, and near the sea. Honey which is derived from pine-trees is on analysis very like honey-dew. It is easy to mistake it, except that it is not so black. He did not regret the flow of honey-dew, and, so far as he was concerned, he had welcomed it. Bees were no worse for it, and were quite as energetic as those bred on the best honey, and he has been very pleased to see the flow; but he did not like to see it in the honey. If it were possible to make any advance in the use of honey-dew for bee-breeding purposes, we might turn our attention to breeding the aphis on a larger scale. He had one question he would like to ask, and he asked it in the interest of bee-keepers: "Will Colonel Walker give them the names of those friends who like it?"

Mr. Reid said there was one suggestion he would like to make. Colouring matter was of very great importance in analysis. He thought if we could really get some authentic specimen of honey-dew honey it would be possible to get out that colouring matter and have it analysed and detected by some of those who are experts in the matter. That seemed to him the only way of actually identifying honey-dew. The analyst cannot identify it unless he has something to go upon. Our difficulty is the fact that you cannot get analytical evidence upon which that investigation can take place until you have data for the analysis.

Mr. Crawshaw asked if it was possible that the colouring was due to the fungus spores which were thrown off?

Mr. Lamb wished to quote the evidence of a friend of his, who wrote to say that he had lost a good many stocks last winter from dysentery, and he attributed the disease to honey-dew alone. He says that another winter he would rather extract the honey from the combs and feed with cane sugar.

Mr. Cowan said it was possible to remove the colouring from the honey. Some ten or twelve years ago he demonstrated this before a meeting of the Association in the rooms at Jermyn Street. He showed them how dark honey that had been sent to him had been clarified and made perfectly clear. In the first place, it was diluted with water, then it had mixed into it animal charcoal, and it was then filtered. The product was perfectly clear and transparent diluted honey, which, by evaporation, was brought back to its original density.

Dr. Elliot thought that in those cases where honey-dew was not due to aphis it might be due to bacteria. It seemed certain that it was not always due to aphis, and it can hardly be a beneficial secretion to the plant, because it does so much damage to it. He thought that it had been noticed that after cold north-east winds in May aphis was very abundant in the summer. Last year it was very bad, the elder-trees being especially covered with it, and many of them were killed in consequence.

Mr. Richards said there was one point Mr. Lamb had touched upon which had not been followed up. Last year his strongest stock was an Italian one, which should have gathered most honey, but stored very little honey at all. No honey-

dew whatever was gathered by it, and what honey there was, was absolutely as clear as water. He just gave this one instance, as there may be others with similar experiences which bear out some of the remarks which have been made. He did see some honey-dew produced from a rather smoky neighbourhood, and it was as black as coal-tar.

Mr. Avery asked if Colonel Walker had noticed if honeys impregnated with honey-dew granulated in the same way as pure honey, and if the colour after granulation was dark. The dark-coloured bottles alluded to by Mr. Crawshaw had subsequently granulated in the usual way, and resembled very fair clover honey in colour.

Mr. Cowan, in summing up the discussion, said that both sides were right, because there was honey-dew produced by plant-lice and honey-dew produced by exudation of the leaves. You will always find a strong flow of honey-dew after hot and dry days, followed by cold and damp nights. If the night is dry, you do not get honey-dew; if it is a damp night, you are sure to have honey-dew. There are two causes which produce honey-dew. First, insects, which attack the leaves, and digest only part of the liquid they suck up, discharging the greater part in sticky drops, which we all know. Then, in the absence of insects, there was the exudation of the leaves. The exudation forms in small drops on the under-side of the leaves, and drops from one leaf to another. This has been verified by experiment, and anyone can test the experiment. If you take a branch of a tree and put it in water, allowing the leaves to be in an atmosphere saturated with moisture, after carefully examining the leaves to see that they were free from insects, you will find in time the drops of honey-dew form on these leaves. There are certain trees which produce it much more readily than others, as, for instance, the ash. He had intended to bring some ash-leaves with him to show them that night with the honey-dew crystallised on them. The two honey-dews differed in many respects, that produced by the leaves being formed at night—just the reverse to the other; that produced by insects being formed during the day, and the hotter the weather the more of it was produced, the greatest production being in the middle of the day; that was because the aphides were feeding during the day. During the night they do not feed on the leaves, so that the production ceases. On the other hand, the leaves exude honey-dew during the night, when the atmosphere is moist. There was also a distinction in their composition. We all know that flower nectar is composed of saccharose and glucose, but the composition of honey-dew produced by insects contains a large quantity of dextrine, gums, and other sugars, such as mannite. Mannite is abundant in the ash, and is found in white scales on the leaves. Now, the honey-dew that is produced by the exudation of the leaves is identical with the nectar that is collected from the flowers. We know that the polariscope helps us very much in discovering these things. All flower-honey polarises to the left, and honey-dew, on the other hand, polarises to the right, like glucose, and it was supposed at one time that all honey that did not polarise to the left was adulterated. It is now known that some of this honey that polarises to the right is not adulterated at all, but is due to honey-dew. There is another important matter. The exudation of the leaves also polarises to the right, and we have to find out how to differentiate the one from the other, and devise a method of diagnosing it. He had demonstrated some years ago that insect honey-dew polarised to the right; but as the honey-dew produced by the exudation of the leaves polarised to the right also, after dialysing it for twenty-four hours, according to Dr. Haenle's method, it would go back to zero, whereas the other would not do so. It therefore showed that there was a difference between the insect honey-dew and the exudation of the leaves. This was a very important point to bear in mind. In some districts in France bee-keepers value this honey-dew so much that they take their bees to those parts where honey-dew is prevalent. When he (Mr. Cowan) stayed at Hohwald, in the Vosges mountains, he investigated the matter carefully. He examined the fir-trees that were being cut down which were visited by the bees. He had also brought over and exhibited some of the conifer honey to the members of the Association. That honey was a long time in granulating. He showed that it polarised to the right something like 40 deg., but on dialysing it went back to zero. That is the only honey-dew honey that goes back to zero—the honey that exudes from the leaves. Mention had been made about black mould on the leaves. This is due to a fungus called *meliola*. The mycelium forms a black, compact membrane on the upper surface of leaves. The fungus is not parasitic, but feeds on the honey-dew secreted by the aphides, which it follows. There are different species of it in different countries and on different trees. The orange-tree is very subject to it, and we often get oranges covered with black; it is the same fungus, only a different species. As mention has been made of some plants exuding nectar, he could add the vetch, from which the bees collected as much from the petioles as they did

from the flowers. As to the colouring matter, it was very difficult to say where it comes from. We find honey of different colours, but we did not know the cause. Heather honey was dark, and clover honey light. Why it was so they could not say. Probably there was a good deal of black sediment in honey-dew that came from soot and other impurities, which very likely had much to do with its darkness. He had touched upon all the points, and he would like to express the thanks of the Association and of himself for the very able paper that had been brought before them that evening by Colonel Walker, and for the light that he had thrown upon the subject.

Colonel Walker said he would like to personally thank those members present for taking part in this discussion, and everybody for the kind way in which they had listened to his paper. He would simply say, in regard to Mr. Lamb's observation, that Buckton's book, though old, remains a standard work; but still, everybody must be guided by his own personal observations, and it is everybody's duty, before he declares that the exudation is not honey-dew, to satisfy himself that there are no aphides, because a very few can do a great deal of mischief, and those that had done it may have left the tree. The honey-dew remains stuck on the leaves, and a little moisture makes it look quite fresh again. It is to be hoped that somebody will prosecute the idea of trying the effect of micro-photography on collected deposits, because that would enlighten us. It was suggested that he should make private revelations in regard to his friends preferring honey-dew to honey, but he would say that his friends were very particular, and he would not like to do so.

(*Continued next week.*)

BRITISH BEE-KEEPERS' ASSOCIATION

NOTICE.

The meeting arranged to take place on May 19 at 11, Chandos Street, Cavendish Square, London, to discuss the reorganisation scheme will be held on Wednesday, the 18th inst., in consequence of the room not being available on the date originally agreed upon.

AMONG THE BEES.

WHY BEES DIE OUT IN SPRING.

BY D. M. MACDONALD, BANFF.

If I place on record twenty separate causes for colonies of bees dwindling or dying quite out in late spring or early summer I may do something to put a few bee-keepers on their guard. Many of these causes, taken in the bud, can be prevented from developing, just as a noxious seed, even if it germinates, may be checked from growing into a plant by curbing its growth or checking it in its early stages.

Queenlessness causes the loss of thousands of colonies yearly. Timely measures taken in late autumn, or even in spring, whereby a mother is supplied, prevents the extinction of the stock, and may mean the securing of a large surplus.

An *unfertile queen*—reared, it may be, too late in the season to enable her to take her nuptial flight—as surely results in the dwindling or ultimate death of the community. The cure is the same—timely re-queening.

An *aged queen* means early cessation of laying in autumn, and a consequent shortage of young bees in winter, with the almost inevitable bad "springing" of the colony. Weak in autumn, they are weaker in winter, and weakest in spring. How can they be expected to survive?

Weak lots of driven bees, small nuclei, hives which have been drained of brood, stores, or frames of bees, mean too few bees to ensure safe wintering, because the very best packing for bees is *bees*. The Society for Prevention of Cruelty to Animals should have a look-in here.

Robbing causes the death of many lots of bees. Like many other troubles, it is not so much a disease as an index of weakness. Generally, if you eliminate the weakness you suppress the robbing boom in its infancy.

Dysentery weakens even a strong stock very rapidly. Prevention here is more potent than cure. Avoid the cause for this ill and you sterilise the germ from which it springs, and therefore have no dysentery.

Brood diseases wipe out stocks as nothing else can. Here many an excellent bee-keeper finds his best efforts impotent. Here, if anywhere in apiculture, we find "No man liveth unto himself alone," because, however clean a bill of health he may claim to-day, he knows not but that on the morrow his bees may carry home the germs of death from some hatchery over the hedge. Why? Round the question of stores centres a large number of death-producing causes. A *shortage of stores*, as a matter of course, means extinction. As nothing puts such energy into bees as ample stores, so nothing takes the heart out of them as underfeeding while living in a beleaguered condition. An utter lack of stores means annihilation.

Candied stores are almost as bad as no stores. In the first place, they are an improper and unwholesome food, and are almost certain to bring about disease, with weakness and debility following in

its train. Such a stock cannot thrive. In the second place, they generate excitement, untimely flights, and consequent destruction.

Sour honey cannot be a healthy food. It is immature, thin, rancid. Sometimes this is a result of the season, sometimes of inferior nectar gathered late in autumn, and sometimes it arises from the bees for some cause failing to evaporate the superfluous moisture.

Honey-dew this season must be assigned a place in the twenty (or more) causes which will bring death to many a bee-commonwealth. I have already sounded a warning note in regard to this danger.

Syrup badly made, supplied either too thick or too thin, not well boiled, made of inferior sugar, or with no acid to aid the bees in its inversion, or if it has been fed too late for the bees to seal, will prove a death-trap.

Improperly-arranged stores may be, at certain times of the winter, about as bad as no stores. With zero weather it boots not that abundance of even prime stores should be somewhere in the hives if it is not within the range of the cluster. This shows the folly of too late a preparation for wintering.

Candy is at times an excellent winter food, and, indeed, it is the only emergency ration allowable during winter and early spring. But it too often entices bees outside, to their own undoing; and by rousing them to untimely exertions may cause the death of thousands of bees even in strong hives.

Improper protection is highly detrimental and wastes bee-tissue, while it causes them to make undue inroads on their stores. Give ample supplies of heat-conserving coverings over frame-tops, and see that all hives are wind-tight, thus shutting out all cold draughts.

Damp is a deadly cause of trouble. Even a gentle percolation at some small crack may mean disaster for a powerful colony. Damp quilts are among the bees' worst foes, and should never be allowed to remain on a hive.

Ventilation is a very important factor in securing the winter comfort of bees, and the want of it is highly detrimental. Plenty of fresh air is an indispensable requisite to sound health, and the bees require a regular supply.

A too large entrance, however, during winter rushes to the opposite extreme, and produces chill, discomfort, and disease. To keep up the temperature bees consume too much honey, causing, it may be, dysentery and other ills.

Jarring of the hives during the season of repose rouses the bees unduly, breaks up the cluster, and sends the bees in a body to the open cells, or even forces them outside when climatic conditions demand close clustering.

Mice prove destructive to bee-life. They damage the combs, raise a foul odour in the interior, and make the true inhabitants discontented with their home.

At present I can only say guard as well as you can against each or all of these ills in the weeks lying immediately in front of us.

TOTAL HONEY IMPORTS

FOR THE YEAR 1909.

January ...	value	...	... £1,899
February	,,	...	... 1,767
March ...	,,	...	... 3,135
April ...	,,	...	... 6,850
May ...	,,	...	... 5,719
June ...	,,	...	... 5,886
July ...	,,	...	... 5,587
August ...	,,	...	... 4,459
September	,,	...	... 1,726
October ...	,,	...	... 1,809
November	,,	...	... 1,983
December	,,	...	... 1,558
	Total	...	£42,378

Honey imports for 1908 were £31,769. The total for 1909 shows an increase of £10,609—due, no doubt, to the scarcity of native honey, owing to the adverse bee-season.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

INVENTOR OF THE FRAME-HIVE.

[7808.] If I am not very much mistaken, the first practical movable frame for a bee-hive was invented by Major Munn. Is he still alive? I have a book written by A. J. King, and the "Munn" frame is illustrated in it. It is very like the frame now in use in the United States. I want to know about the Major, as I think great injustice has been done him by some bee-keepers. I was much interested in the bees and hives exhibited at the Great Exhibition in London in 1851, and have kept bees on and off ever since. I only came to Colorado two years ago last July, and though my bee-keeping has been in a small way till lately, now I have nearly 150 colonies. That is small for Colorado, where quite a number of

bee-keepers have from 500 to 1,000 colonies.

We are hoping for a good crop of honey this year. Both last year and the year before very little honey was secured.

The pear and peach bloom is over, and the apple and plum trees white with blossom, but we are likely to have killing frosts, as this frequently happens in spring here. In April, 1909, we had snow fall eleven days, and on the 30th the mercury fell to 22 deg.

No spring like the present was ever known before.—C. H. HOWARD, Boulder, Colorado.

[Major Munn died on October 28, 1873. He was the first to put bar-frames into a box in 1834. After testing and improving his hive he took out a patent in Paris for it in 1838. The frame was not, however, like that pictured in King's book, but was deeper than it was long. The end-bars also projected above the top-bar, and the bottoms ran in grooves on the sloping floorboard on one side and the floor on the other. He published his pamphlet first in 1844, and brought out another edition in 1851, when his hives were exhibited at the Great Exhibition. The hive was clumsy with its sliding bar-frames and zinc slips, not practical, and never came into use. Dzierzon invented a hive having top and side bars, and at the suggestion of Berlepsh a bottom-bar was subsequently added, making it into a square frame. About the same time Langstroth, quite unknown to Dzierzon, invented the improved frame-hive such as we have in use now. This was the first really practical hive, so that although Langstroth was not the originator of the idea of employing a frame, Huber being much more entitled to this honour, he was the first to construct a frame-hive on correct principles, and certainly deserves the title of "father" of modern bee-keeping.—ED.]

ROSS-SHIRE NOTES.

[7809.] Following on the disastrous season of 1909, winter losses and spring dwindling have played havoc in many apiaries. The zero frost in January wiped out the weaklings, the bees being frozen while huddled on their patches of brood.

In some cases strong stocks winter-packed with young queens and ample stores were, when opened up in March, found reduced to mere handfuls. An overhaul during the closing days of the month displayed stocks boasting one, two, and at most three patches of brood, and April being wintry to the end, little or no pollen was carried in to induce rapid increase. May Day has revived our hopes with the pleasing sight of the little workers bustling in and out of the entrances, their trouser-pockets bulging with bright pollen from the gorse. Bee-men being proverbially optimistic, we confidently expect a good honey-season in this summer of 1910.

Early Swarms.—Here in the North July is our swarming month, although I once had a swarm on May 28. An early May swarm, with six weeks to build up for the July honey-flow, would provide an interesting experiment, and I do not mind paying a fair price to anyone who can supply me with a really good swarm at an early date.

F.B. Hint.—The B.B.J. has been so "foul broody" of late that it would seem advisable for the readers to disinfect themselves and their raiment in the interval between perusal and bee-handling. —J. M. ELLIS, Ussie Valley.

DR. EVANS'S POEM ON BEES.

[7810.] Could you or any brother bee-keeper tell me where I can get a copy of Dr. Evans's poem, "The Bees," from which Dr. Bevan quotes so copiously in his "Honey-Bee: Its Natural History, Physiology, and Management" (1838)?

Dr. Bevan alluded to it as an "unfinished poem," and says that its author "was for many years an eminent physician in Shrewsbury, but has now retired into Wales, where I hope he will find sufficient leisure and encouragement to resume the truly classical theme he has so nearly completed."

Three parts of the poem appear to have been published, and I am anxious to get them if I can.—SUSSEX EAST.

[Dr. J. Evans's poem, "The Bees," was to have been completed in four books, but only three were published—Book I., 1806; Book II., 1808; Book III., in 1813. The publishers were Messrs. Longman, Hurst, Rees, and Orme, Paternoster Row, London (price 7s. each volume). The book has long been out of print, and only occasionally can a secondhand copy be picked up. Books I. and II. were reprinted in the B.B.J. in vol. iv. (1876-7). There is a copy of the original in the library of the British Bee-keepers' Association available for the inspection of members.—ED.]

FOUL-BROOD LEGISLATION.

[7811.] I have read with interest the letters on the above subject appearing in the B.B.J., and it seems to me the chief objection to legislation is the dislike of bee-keepers to inspectors interfering with their bees. Some writers have mentioned the Swine Fever Act, quoting it as an example both for and against legislation. One point in that Act has not been men-

tioned—namely, that it is no part of an inspector's duty to examine everyone's pigs; but it rests with the owner to give notice of any suspicious cases either to him or to the nearest police, and I have no doubt there would be a clause to the same effect in the Foul Brood Bill, which would remove the chief objection.

I should like to suggest that there be a clause in the Bill giving power to bee-keepers to manipulate their own bees in the presence of the inspector instead of allowing him to handle them; this should do away with objection No. 2—that is, the fear of infection. At one time I was numbered amongst the objectors to legislation, but have altered my opinion since then. The change in my views was partly owing to a case that occurred about five miles from here of a young bee-keeper being obliged to give up bee-keeping through having a stubborn neighbour whose hives were badly affected with foul brood, and although healthy stocks were offered in place of the diseased ones, he refused to have them touched.

I hope to have the pleasure shortly of seeing the text of the proposed Bill in the B.B.J., when we may hope to have a large majority in favour of it.—W. PATCHETT, Cabourne, Caistor.

[7812.] As a reader of the B.B.J. I hope you will allow me a small space in which to express my opinion on the foul-brood question at present under discussion. As Mr. Avery says (page 157), compulsion is a very ugly word, and I think a few Government inspectors will not improve its appearance very much. Why not wait a year or two longer and see if such an Act is going to rid Ireland of foul brood?

I have followed the B.B.J. closely for comments from that country, but up to the present I have been unable to learn whether the Act has done any good or not.—J. G. E., Cumberland.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Fumigating Combs (page 123).—In reply to S. Moon and W. Randell, I have a gas-tight box of about 11 cubic feet capacity, in which is placed a rack for several tiers of combs. The lid of the box is bolted down against a rubber band. On the top of the rack I place a saucer containing a table-spoonful of bisulphide of carbon. This fluid is volatile, and soon pervades the interior. I have made no experiments to accurately determine the minimum duration of treatment, but I have kept combs in the gas for a week at a time, and have also stored them safely during the winter. I cannot say that there is no ill-effect, but I have never noticed any, and should not expect it, owing to the very nature of the substance, which must soon be dissipated after the removal of the combs. If this is insufficiently clear, or if it would be of general interest, I shall be pleased to illustrate the whole apparatus. My box was made by Mr. G. M. Saunders (one of his many ingenious devices) for the purpose of formaldehyde experiments. Satisfactory results could no doubt be obtained by lining and painting a suitable box.

Cleanliness and Stings (page 124).—I should like to see the face of, let us say, a lightning operator like Mr. W. L. Coggshall, U.S.A., whilst this article on bee-hygiene was read to him. Indeed, I doubt his patience to listen unless held down. I cannot imagine his hand-washing between each manipulation. Or, to be more true to life, his wiping of boots between each pedipulation of the hive-supers! Yet, for those of us who work in more leisurely fashion, there is still truth to be found in the old maxim of "More haste, less speed." And if ever there were a good argument for the use of rubber gloves surely it is here.

Experts as Teachers (page 124).—The Rev. A. R. Downes Shaw takes, I am sure, the right view of this matter in his report. I think that if experts were to have on their printed advice-cards a request that the member should jot down beforehand any questions he wished to ask, the expert's time would be saved, and occasional regret might be avoided. Members should not be passive resisters or merely apathetic owners. It is unreasonable, for instance, having supers in place, giving the expert an assurance of health, and having no questions to ask, to afterwards complain that he was only five minutes in the place. Of course, if the expert was worth his salt, he was off to somebody who needed him more than you happened to do at the moment.

Nosema Infection (page 127).—As the majority of bee-flowers seem to be specially constructed to prevent contamination of their nectar by chance dropping of infected matter, it is not easy to see, with Dr. Zander, how disease should so readily spread by this means. Nor does there seem to be, at first sight, any connection between this method of communication and the prevalence of the disease in the month of May. Are the flowers that bloom in the spring so deadly? At the same time, it may be that the fæces are the means of dissemination, and that the spring watering-places get contaminated either by this means or by the drowning of over-adventurous bees.

"The Garden of England" (page 128).—Mr. Bailey thus refers to the beautiful Vale of Evesham, but it is possible that

men of Kent may have somewhat to say in the matter of Worcestershire sauce. Evesham is a wonderful gardening centre, but the title of "The Garden of France" may soon be more appropriate, if bell-glasses and hand-lights pursue their triumphant way. The very name of Evesham is reminiscent of gardening, being, no doubt, a corruption of Eve's home (ham, or hamlet), so that its title may well go back to the earliest days of toil and tilth. After all, there is still that about a garden which lifts us above ourselves and puts us in touch with eternal time. It is for the garden that seasons come and go, the sun rises and sets, and showers which distress the town-dweller rejoice our heart. It is here that we carelessly appropriate ancestral toil, whilst we in turn add to it for those who may follow. But in our little hour it is in the garden that we truly find the peace which stays us against the time when the garden itself shall know us no more.

Ah, Moon of my Delight, who know'st no wane,
The Moon of Heav'n is rising once again;
How oft hereafter rising shall she look
Through this same Garden after me—in vain!

Honey as Food (page 131).—In view of the fact that honey is cheaper than butter, or, considering its spreading capacity, at least as cheap, whilst it will keep much longer and is of exceptional nutritive and medicinal value, it is surprising that mothers do not place it constantly upon the table; for, in the words of a well-known advertisement, children like it.

Foul Brood Act (page 138).—I hope that bee-keepers who think with Mr. Woodley will respond to his appeal and speak out. Let us know who these gentlemen are, and what exactly are their objections to legislation. Then we shall know where we stand, and it may be that we shall make converts of some of the objectors. I am very hopeful that we shall get a satisfactory Bill this time; but we ought to hear the other side, and consider carefully all that can be said for it. That legislation can stamp out a disease is shown in the case of rabies, but regulations must be efficiently and generally carried out. What has been done in the case of F.B. is very fairly shown in the Swiss report appearing in the same number as Mr. Woodley's letter. Swine fever, to which he refers, will only be stamped out by co-operative measures, and these can only be ensured by legislation, which seems likely to become even more stringent.

Are these Things So? (page 147).—"Flos" says that the old skeps are destroyed every year, and the swarms retained by the cottagers. But this is exceedingly bad bee-keeping, and quite opposed to the practice of skeppists in more Northern districts. "Flos" might perhaps advise these bee-keepers to their own benefit when he is driving their bees. As to the gentler means of persuasion in the matter of disease, have not these been tried continually by the associations? And, one must admit, with some measure of success. They are, however, of no use with a bee-keeper who, for his own reasons, refuses all help whilst remaining a source of danger to those around him. I am informed of a gross case where healthy bees were continually re-infected from such a source.

Echoes from the Hives.

My apiary of sixteen hives has wintered well, but some stocks required feeding in March, and all require regular supplies now, as we have only had two or three good warm days. Last season I took 500 lb. light honey and had twenty-eight swarms. It is a splendid clover district, and I have never had any honey-dew in the fourteen years since I started with one hive.—ST. OSYTH, Essex.

Bee-Shows to Come.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B.B.K.A. Prizes arranged in groups of counties for Associations affiliated to the B.B.K.A. Schedules from W. Herrod, Secretary B.B.K.A., 8, Henrietta Street, Covent Garden, London. **Entries close May 31.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

Notices to Correspondents.

*** Mr. J. Moir wishes to inform readers that his supply of clover-seed is finished, and hopes that no more applications will be sent to him.

E. H. S. (Bushey).—*Bees Dying.*—The bees sent are too dry for diagnosing, but appear to have succumbed to virulent dysentery.

M. L. (Sunbury Common).—*Ailing Bees.*—The contents of stomach do not show any disease, and it is quite likely that making the syrup in a copper vessel has had a deleterious effect. The honey-sacs were well filled with a clear liquid, which the bees had recently imbibed.

H. E. B. (Kettering).—*Bees Robbing by Agreement.*—Your colony is being robbed by agreement amongst the bees themselves, and shows that it is weak and without energy, or is lodged under unsuitable conditions. Instead of offering any resistance, the bees of the hive appear to fraternise with, and even aid, the intruders in their robbery. All

this goes on quietly and without any uproar. The cause is either queenlessness, or a feeble and discouraged colony with little brood and a decrepit queen. As you say it was a last year's swarm with a queen in her third year, this is probably the reason for their behaviour. The best way is to at once remove the hive attacked into a cellar or other place where bees cannot get at it. The colony can then be united in the evening, when peace has been re-established, with a strong colony capable of resisting the attack. Of course, the queen should be removed.

J. S. W. (Suffolk).—*Bees in House.*—1. It would be impossible to remove the bees without damaging the walls. As the bees are heard in the bedroom, probably the best plan would be to make an opening through the plaster, and if the combs are between the battens expose them sufficiently to enable you to manipulate. By smoking the bees you can cut out the combs containing brood and tie them into frames. The remaining combs can be removed and the bees brushed off into the hive. Put all brood together, and fill out with frames of comb-foundation, reducing the space with a division-board. You cannot drive bees out in any other way. 2. For removing the bees in the roof, you must take off the slates, which can easily be replaced without doing any damage to the roof. 3. As the bees are building comb in candy-box, it shows that they are strong and ready for supers.

Rex (Sudbury).—*Legal Right to Keep Bees.*—You have a perfect right to keep bees, provided they are not a nuisance to anyone and do no harm. Should they, however, become a nuisance to your neighbours by stinging them, they would obtain an injunction to restrain you from keeping bees in such a way as to cause nuisance and injury to them.

Anxious (Berwick-on-Tweed). — *Placing Excluder-zinc.*—The proper way of placing excluder-zinc on top of bars is that described on page 63 of the "Guide Book," with the slots running at right angles. This ensures a larger number of openings, and enables the bees to pass up between every frame. If placed the other way the bees would be prevented from passing up between many of the frames, owing to the openings being reduced by their overlapping the frames or be entirely closed by them. The catalogues are certainly wrong, and you have done quite right in placing the excluders as explained in the "Guide Book."

T. A. B. (Chester).—*Molasses as Bee-food.*—The "black syrup" would most probably be unwholesome food, and we should not advise you to use it for your bees. Make some syrup yourself from cane sugar, and you can be sure what you are giving them. Ripeners made of tin are so cheap that it is not worth while to risk spoiling the honey by using the barrel for this purpose.

R. F. V. (Slingsby).—*Bees Found Dead in Spring.*—The bees have evidently died from starvation. There is no sign of disease in combs. When a number of bees are found dead head downwards in the cells it is a sure sign that they have died from want of food. In the case of the second stock it is possible that the candy has become too hard, or perhaps it was not close enough to the cluster for the bees to reach it during the cold weather.

A. P. (Sussex).—*Using Cresylic Acid as a Bee-subjugator.*—No harm will result if you are careful to use a weak solution, but in future we should advise you to order Calvert's No. 5 carbolic acid only.

Suffolk (Leicester).—*Queen Cast Out.*—Queens will die from natural causes sometimes, and this is the case with yours most probably. The queen is one of last year's raising.

Beginner (Hants).—*Using Old Hives.*—Complete the new hives as soon as you can, and transfer the bees into them. The old ones can be destroyed, as they are evidently worthless. As you are a cabinet-maker, it will be easy for you to cut down if too large, or make a temporary arrangement to hang those frames which are not of standard size in the new hives. The non-standard frames should be removed as soon as all brood has hatched out, and with this end in view only put those actually containing brood in the new hives. The others can be discarded and the comb melted down.

A. B. C. (Llandudno).—*Dysenteric Bees.*—1. When bees have died of dysentery it is not advisable to use the honey from the soiled combs. 2. The syrup is too thin for autumn food, and if not made from pure cane sugar has probably caused the mischief. 3. Carbolic acid (see "Guide Book," page 198) is the best disinfectant for washing out the hive.

Suspected Combs.

Cushag (Isle of Man).—The comb is affected with incipient foul brood. In this early stage at the time of the year a cure should be effected by following instructions given in "Guide Book."

Amateur (E. Yorks).—The sample of comb contains one chilled bee only. No disease.

A number of letters, reports of annual meetings, &c., are held over till next issue owing to pressure upon our space.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows :—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

8 FRAMES, with Bees and Hives, packed and put on rail, 20s. and 22s. 6d.—Further particulars, THOMAS EVANS, Bee-keeper, Waddesdon, Bucks. z 58

FOR SALE, 10 new "W.B.C." Hives, 10s.; also 12 new "W.B.C." Section Racks, with Section Hangers, £1.—A. C. THOMPSON, Wood-street, Higham Ferrers. z 56

BARGAIN.—New Bee-tight Section-built Extracting Shed, boards, 1 in. flooring, sides ½ in., roof ⅝ in. (all tongued and grooved), with stiff roof and flooring joists, raised extracting platform, size 12 ft. square; larger required. Will sell cheap.—THOMAS, Coedmelyn, Stackpole, Pembroke. z 55

"W.B.C." HIVES FOR SALE, nearly new, in splendid condition, 10s. each; Racks of Shallow Combs, wide ends, 3s. each.—FREEMAN, 17, Highfield-road, Saltley, Birmingham. z 49

FOR SALE, 4 30-lb. tins Medium-coloured Honey, price 6½d. lb. Sample, 2d.—J. WAKEFIELD, Papcastle, Cockermouth. z 48

WHAT OFFERS? 20 Racks Drawn-out Shallow Frames, used once, also 200 Brood Combs, cheap to clear, guaranteed healthy.—SOUTHCOTT, Gittisham, Honiton. z 39

FOR SALE, 3 Crates, with 8 Shallow Frames, Comb drawn out, and 4 ditto, with 10 Frames, and Foundation, reducing stock on account of illness. Cash, what offers?—R. EVANS, Four Elms, Edenbridge, Kent. z 40

WANTED, Honey Extractor. State particulars and price.—STAFFORD ALLEN, Long Melford, Suffolk. z 41

FOR SALE, Lloyd Motor Cycle, 3 h.p., in good condition, just been thoroughly overhauled, tyres almost new, easy starter, very fast, will climb anything; a great sacrifice, £12 10s.—H. DRAYTON, New Bolingbroke, Boston. z 42

BOOK SWARMS NOW, 2s. 6d. lb., English Bees.—WENT, Riverside, St. Osyth, Colchester. z 43

WANTED, Geared Extractor and "Rymer" Press.—W. J. WARREN, 121, Glendower-road, Plymouth. z 47

FOR SALE, 8 Section Racks, 5 are Lee's No. 48, fitted Foundation, Separators, &c.; Racks used one year, taken off Hives, guaranteed healthy, 1s. 6d. each, 11s. the lot.—D., c/o B.B.J. z 53

STRONG TRANSPLANTED TOMATO PLANTS, Up-to-Date, Holmes' Supreme, Laxton's Open Air, 1s. dozen.—GELDER, Sturton, Lincoln. z 61

FOR SALE, few surplus Stocks of Bees, in good Hives.—F. S. GLOVER, South Leverton, Lincoln. z 15

Special Prepaid Advertisements.—*Continued.*

WANTED, rent small Farm, or purchase small holding, Bee district, Midlands.—SOCKET, 4, High-street, Newport Pagnell. z 22

MOLESKINS Wanted, square dried, all the year round.—MARSHALL, B.J., Worcester Park, Surrey. y 93

FOR SALE, 14 Stocks, guaranteed healthy, in "W.B.C." Hives, mostly new last season; sacrifice 36s. each.—T. RULE, Summervale, Annan, Dumfriesshire. y 97

WANTED, copy of "Pollen," by M. Pakenham-Edgworth, F.L.S., published 1877.—"BOOKS," B.B.J. Office, 8, Henrietta-street, Covent Garden, W.C.

SEVERAL GOOD SOUND SECONDHAND HIVES, "Combination" and "Cottager" patterns, repainted three coats, fitted with ten new Standard Frames, and dummy, 6s. each.—F. E. MATTHEWS, Cofton Apiary, Northfield, Birmingham. y 82

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed.—J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

BEES ALL SOLD FOR MAY AND MOST FOR JUNE.—HAMBROOK, Church Farm, Newington, near Sittingbourne. z 45

NATURAL HEALTHY SWARMS, in June, 2s. lb.—HAMBROOK, Church Farm, Newington, Sittingbourne. y 88

BEES, prolific strain, healthy, Nuclei or Stocks, 2s. 6d. per bar.—T., 2, Springfield-cottages, Saffron Walden. z 50

LIGHT SECTIONS BOUGHT, 7s. to 8s. per dozen.—Send or write to HONIELADE CO., 23, Moorfields, E.C. z 52

FOR BAR FRAME HIVES, Section Racks, Shallow Supers, &c., at lowest possible prices, apply to G. F. HICKMAN, Shelley-street, Kingsley, Northampton.

PRIME NATURAL SWARMS, 1909 Queens, from 4 lb. to 7 lb., 3s. lb. till June 15th; 16th till 30th, 2s. 9d. lb.; July, 2s. 6d. lb.; healthy, safe arrival guaranteed, cash with order; empty boxes to be returned.—S. BAILEY, Two Mile Ash, near Horsham (late Itchingfield). z 57

33RD YEAR.—Imported Italian Queens, 7s. 6d.; Home-raised British and Hybrid, 1909, 5s. 6d.; also Nuclei. Orders booked for Swarms.—E. WOODHAM, Clavering, Newport, Essex. z 60

GOOD HARDY AND VIGOROUS QUEENS, 1909 Hybrids, from amongst the Cumbrian Hills, 5s. each.—DOUGLAS BOUCH, Aspatria, Cumberland. z 59

"W.B.C." HIVES, complete, 14s. 6d.; "Cottagers," 11s. 6d. Wanted, Honey, Wax.—BOWDEN, Broomhill, Witley. z 2

34TH YEAR.—Three-Frame Nuclei, Queen, Bees, Brood, and Stores, 12s. 6d.; 4 Frames, 15s.—ALSFORD, Haydon, Sherborne. z 18

50 HIVES AND QUANTITY APPLIANCES, secondhand, cheap. List on application.—CHARTER, Tattingstone, Ipswich. z 23

BROOD COMBS, 1909, 8s. dozen; secondhand appliances. List.—CHARTER, Tattingstone, Ipswich. z 25

Editorial, Notices, &c.

THE DEATH OF KING EDWARD VII.

With overwhelming suddenness and only a few hours' notice of the illness of King Edward, the Empire has been plunged in grief, and now mourns the loss of a good Sovereign. Millions of English-speaking people awoke on Saturday morning to a sorrow so profound that it only has a parallel to that of the death of Queen Victoria nine years ago. Not only do we all feel the loss, but deep and sincere regret will be felt throughout the world, where the dead monarch was so well known and loved, and where he earned the title of "Peacemaker." It is by this grand and glorious title that he will be known to future generations—a title which will go down to posterity unsullied by any unworthy act during his reign of only nine years, one of the shortest in our national history, but also one of the noblest, for there have been few monarchs who so thoroughly understood the people, who won their confidence and sympathy, and whose popularity was so universal. His greatness and sagacity came out pronouncedly in a great crisis, and it is a sad loss to the country that he should have been removed at the present moment when his wisdom was so much needed. No King in passing away has ever been more regretted by a sorrowing people, and he will always be regarded as a ruler who sought the welfare of his subjects, and whose personal characteristics were those of a noble-hearted gentleman. All will feel deep sympathy with Queen Alexandra and the Royal family, and give their loyal allegiance to King George.

BRITISH BEE-KEEPERS' ASSOCIATION

We desire to call the attention of members of the B.B.K.A. and delegates of the county associations to the special meeting which is to be held on May 18, for the purpose of taking into consideration the re-organising of the British B.K.A., with the special view of bringing all the county associations into closer union with each other and with the parent association. We have arrived at a period when it is obvious that the bee-keeping industry cannot prosper or advance without the co-operation of all the bee-keepers' associations. This cohesion does not at present exist, as every association is working by itself for its own purposes, instead of for the general good of the industry. It is therefore desirable, and we would express the hope, that full consideration be given to the scheme which has been suggested by the special committee appointed for the purpose. It is quite natural that differences of opinion should make themselves manifest, but it is not sufficient to condemn the scheme without suggesting in what way it can be improved, so as to make it workable and more acceptable. Every association that desires progress must see that it would be to the advantage of the industry to have a strong central body, such as all other industries have found so necessary, and without which bee-keeping can never attain the same position that it does in other countries where combination is the rule. It has been suggested that the Briton does not like to be "bossed," and that bee-keepers in the country did not wish to have their affairs ruled by "gentlemen in London." This is a very narrow view of the matter, for there is not the slightest intention of the Council interfering in the local management of any of the associations, who would still attend to and manage their own business in their own way. There are, however, many questions which affect all associations and individual bee-keepers which only a strong central association can manage, and as an instance we might mention the relation of the Government to the industry. It is hopeless to expect the Government to do anything so long as there is this independent action by individuals and associations. On the other hand, if the British B.K.A. could approach them with the support of all the associations it would have the influence which it now lacks, and for want of which the industry can never expand. We would therefore urge that at this meeting on May 18 suggestions should be made which will strengthen the associations, and that in the discussion which will take place all should be mutually forbearing and assistant, and the work, we feel sure, will be satisfactorily accomplished. We trust that the meeting will be a large and thoroughly representative one.

IMPORTANT NOTICE.

REMOVAL OF "B.B.J." AND "RECORD" OFFICES.

Owing to the change in management of the B.B.J. and *Record*, through which Mr. Herrod now combines the duties of manager of the papers and secretary of the B.B.K.A., the accommodation at our present offices has been found inadequate for the increased work of the Association and the journals. We have, however, secured excellent premises a few hundred yards away at 23, Bedford Street, Strand, W.C., where members of the Association and B.B.J and *Record* readers wishing to

call will find us established after the 14th inst. All communications from that date should be addressed to the new offices.

BRITISH BEE-KEEPERS' ASSOCIATION

CONVERSAZIONE.

(*Continued from page* 176).

Mr. Crawshaw, in introducing the subject of "Disease and Compensation," said that under this somewhat general title he did not intend to include a dissertation on "Disease: Its Advantages and Disadvantages," although much of interest might be said on those points. He did not, for instance, purpose an inquiry into the origin of disease, highly interesting though that speculation might be.

A well-known writer has said in one edition of his work that we have the disease with us, and that it is unprofitable to inquire into the origin of it. Speaking for himself, he did not quite agree, except that this was not the time for the inquiry. Nor did he intend greatly to speculate upon the natural compensations, tempted though he was to suggest the existence of these to bee-keepers who held only one view—and that a strong one—on the subject. That the pain which warned us not to hurt ourselves was a friend and not a foe, and that disease which preyed upon the weakling was responsible for the selection of the strong, might be true, but we unreasonable humans liked to find our friends a little less thoroughly disguised. It might be that disease had come to earth from heaven, but in that case there was yet a third place for it to visit, and he greatly feared that some thoughtless bee-keeper had sometimes wished in the stress of the moment that it would quickly arrive at its destination. (Laughter.)

The subject then with which he was to trespass upon their time was, they would no doubt be glad to hear, more limited than these. It was the practical question of insurance, with some regard to legislation, and with particular reference to what was being done in the matter in Switzerland. Last winter he had the pleasure of a talk with Dr. Kramer, who was known to those present as the head of the Swiss B.K.A., and who was indeed one of the prominent men of the bee-world. Dr. Kramer had told him, amongst other things, of the great fight which they were making against disease. They had got a Foul Brood Bill, at once simple and satisfactory, under the wing of the Contagious Diseases of Animals Act. And they had a contributory scheme for compensation of losses which were due to the exercise of their powers. He could not do better than give them at once the gist of the statutes which had been obtained by their Swiss friends.

THE SWISS FOUL BROOD LAW.

Resolutions concerning the inclusion of Foul Brood of Bees in the Cattle Plague Laws.

In consideration that Foul Brood is an infectious disease, which threatens the trade of breeding bees in various districts of our land, and that it is of a dangerous character,

In the application of the Laws against Cattle Plague, and on the representations of the Manufacturing, Industrial, and Agricultural Departments,

It is resolved,

1. That Foul Brood of Bees be, as a contagious disease of infectious nature, and of dangerous character, classed under (No. 12, Art. 24) the executive ordinances concerning the measures against Cattle Plague.

2. That the Cantons appoint expert officials, who shall inspect and arrange for disinfection of infected stocks, and, above all things, for the examination of suspected stands. These functions can be assigned by the Canton to the associated bodies of the Swiss Foul Brood Insurance Society and the Romande Bee-keepers' Association.

3. Every owner of diseased stocks must immediately give notice to the authorities. He is bound to follow out minutely the instructions of the inspectors, to help in the work of disinfection and purification of the apiary, and also to supply further help if necessary.

4. In infected apiaries, no bees, combs, hives, or utensils may be sold, lent, or given away. Infected hives may not be used, but must be locked up in a bee-proof place.

5. The campaign against foul brood in infected apiaries confines itself essentially to the destruction of the germ, by processes of cleansing, disinfecting, burning, and burying. (Here follow instructions for cleansing.)

6. The inspector has the right of acting in suspected districts as though the disease existed.

7. Opposition to the directions (in accord with Art. 36, &c.) shall be punished by fines from 10 fr. to 500 fr. Wilful spreading of disease will be punished at discretion.

(Signed) DEUCHER, President of the Union.
SCHATZMANN, Vice-Chancellor.

Bern, December 3, 1909.

THE INSURANCE LAW.

Articles of the Foul Brood Insurance Scheme of the Swiss Bee-keepers' Association:—

1. Foul brood includes all brood-dis-

eases. Contribution is obligatory upon all members of all the affiliated societies.

2. *Organisation.* — The president is elected by the members through their organ. He is to be responsible for the carrying out of the work.

3. Under him each Canton has an inspector. Several Cantons two inspectors.

4. These inspectors are instructed by the president.

5. District associations elect a delegate and a substitute to carry out the work and assist the inspector.

6. Notices are sent to the chief of the branch, or to the Cantonal inspector, and through them to the chief, and also to the concerned local associations and delegates.

7. The Cantonal inspector undertakes the work and personally directs the officials in the work of disinfection, appeals, cure, and compensation.

8 The Cantonal inspector works with the branches, and takes upon himself the power to inspect non-members.

9. The Cantonal inspector makes a report to the branch association of the cause, course, and result of an outbreak.

10. The central society publishes details of the obligatory duties of all bodies.

11. The necessary funds are raised by means of a premium of only ½d. per hive and subscriptions from the Canton concerned. The premium can only be modified by the decision of the assembled delegates.

12. The numbering of the colonies and the amount of the premium is arranged by the local association. Premiums are sent direct to the central fund.

13. To the charge of the central fund fall the cost of instruction, provision of disinfectants, wages and expenses of agents, and compensation for destroyed colonies.

14. The owner bears one-fourth of the expense.

15. Intentional concealment of disease, false report, negligence, or delay is punished by reduction of compensation.

16. Cure experiments are only to be tried when a good result can be expected.

17. Non-members can only receive 50 per cent. of the compensation.

18. Insurance claims are paid direct from the central fund after notification by the insurance director.

19. The director's decision is final in disputes concerning claims, remuneration of delegates, &c.

20. The cashier of the Swiss B.K.A. keeps the accounts.

(Signed) U. KRAMER, President.
W. C. FREYENMUTH, Secretary.

(For purposes of comparison it may be noted that the Swiss Cantons approximate to our counties. The largest is almost exactly the size of Devonshire, whilst the average size is that of Hertfordshire. The smallest Canton is 14 square miles in area.—L. S. C.)

RULES CONCERNING THE ORGANISATION AND INSPECTION OF THE FOUL BROOD INSURANCE OF THE SWISS BEE-KEEPERS' ASSOCIATION.

The director of the Swiss Bee-keepers' Association, in putting into practice the statutes of the Foul Brood Insurance (from September 23, 1907),

Resolved,

I. ORGANISATION.

1. The statutes of Foul Brood Insurance come into force January 1, 1908.

2. The election of the Canton inspectors and their substitutes, in those Cantons which comprise several local associations, will be taken by a general electoral assembly, to which each local association of fifty members sends a delegate.

The local association bears the travelling expenses of the delegates.

The Canton inspectors and their delegates are elected for three years.

3. For the purpose of instruction and uniform working of the Foul Brood Insurance the Canton inspectors, under the direction of the Insurance heads, meet in a general conference.

4. The collection of the Insurance contributions is done by the local associations.

Each association keeps a Foul Brood Insurance register in duplicate. This register contains the names of all the members, their wintered stock, and the subscriptions to be paid for the Insurance.

The duplicate register is to be sent to the central cashier every year before May 1. The Insurance subscription must be sent up before May 1. Arrears to be made good by the local association. If a bee-keeping member belongs to two associations he is entered on the register of both associations, but pays only the association to which he lives nearest. The other association endorses his name accordingly.

5. Contributions from Cantons, rural associations, &c., in case of loss within their district, go into the General Insurance Fund.

II. DUTIES OF THE OFFICIALS.

6. The director attends to the instruction of the Canton inspectors, the control of their arrangements, the inspection and arrangement of claims. For the Swiss Bee-keepers' Association and the local association and allied authorities he makes a yearly report on the state of the Foul Brood Insurance and the activity of their work.

7. The Canton inspectors look after the infected bees, disinfect them, and, if necessary, destroy them. They work in connection with the local association,

which has for this purpose the necessary police control and financial assistance.

8. As soon as a Canton inspector is notified of disease, he orders as quickly as possible, in agreement with the delegates and the owner, an examination and treatment. He decides in cases of disease (or suspected disease) whether the bees are to be submitted to a cure or destroyed. He also values the bees.

9. The inspector makes out a detailed record of the epidemic, and sends a duplicate to the Insurance Director.

10. The association delegate obtains all information for the inspector of the suspected stocks. He accompanies and assists him in his district, in particular attending to the treatment or destruction of bees and combs and the thorough disinfection of the hives and utensils. He continues to visit the hives after treatment (*vide* Art. 19) and reports to the Canton inspector *re* the health of the bees.

11. The owner of suspected stocks is bound to follow out the instructions of the Canton inspector and the delegate, to assist during the treatment, and to supply, if necessary, means for treatment or destruction. If he does not, the Canton inspector or delegate is authorised to do so at the owner's cost.

III. EXAMINATION, VALUATION, AND TREATMENT OF FOUL BROOD.

12. If foul brood is discovered or suspected in a hive, the owner is bound to report to the director of the association of which he is a member, or in whose district his apiary is, when the delegate of this association undertakes an immediate and thorough examination.

If foul brood is discovered, the inspector is to be immediately informed. If the case is doubtful a piece of comb with the diseased brood is to be sent to the Bacteriological Laboratory to be diagnosed.

(This work is done by Dr. Burri, and the cost of diagnosis is 1 fr.—L. S. C.)

13. To assist the control, every hive is to be supplied with a number before examination and valuation; the numbers to be clear and indelible.

14. The valuation is to be made by the inspector before destruction. The valuation is to be without regard to the condition of the disease, but according to the strength of the bees and the number and quality of the combs. As a foundation for the value of the bees, the price of a similarly strong natural swarm must be taken, the weight of the bees being ascertained approximately. The comb will be valued according to the condition and quality, per square decimeter, 5-15 rp. (about 4 square inches, from ½d. to 1½d.). The sum claimed for loss may not exceed 35 fr. per colony, including wax. Compensation is only paid for destroyed bees and comb.

Those colonies which have been united to others are to be included in the valuation at 50 per cent. of their worth.

Wax to be melted is reckoned at 30 per cent. of its value.

For honey, store combs, hives, and apparatus no compensation will be paid.

Compensation will not be paid for bees which died before valuation.

15. Cure experiments shall only be applied during the period of development of bees (mid-April to mid-June), and only with bees which are suspected or slightly diseased.

(Here follow directions for treatment.)

Treatment I.—This deals with attempted cure, and the special point of interest is the vaporisation in the hive of a solution of formic acid (formic acid 40 per cent., alcohol 20 per cent., water 40 per cent.).

Treatment II.—Deals with starvation and uniting, disinfection of hives, &c. The ground near the hives is to be sprinkled with chloride of lime, and the shoe soles are to be disinfected.

IV. SPECIAL CONDITIONS.

19. Apiaries in which foul brood has broken out may not, either through purchase of bees or through artificial swarming, be enlarged. These conditions are to be enforced for the first twelve months after treatment and disinfection of the apiary by the officials of the Foul Brood Insurance.

Artificial increase and sale of bees are allowed after the space of a year, if after examination by the Cantonal inspector or delegate the apiary is declared free from disease.

Bee-breeders whose whole apiary is destroyed through foul brood may not after disinfection reintroduce bees in the same year. Disobedience of the above loses the right to compensation in case of reappearance of foul brood.

20. Insurance compensation will only be paid in those districts in which subscriptions are paid up and statutes and regulations observed.

Likewise a breeder who suffers loss by foul brood only has the right to compensation if he has followed out the treatment in every particular.

COMPENSATION OF THE OFFICIALS.

The Canton inspector receives from 10 fr. daily allowance and third-class travelling expenses. The delegate receives for work done under the inspector from 6 fr. daily, with third-class fare. Other costs of the delegate fall to the local association. Loss of time, if of less than five

hours, is reckoned only as half a day's wage.

(Signed) U. KRAMER, President.
W. C. FREYENMUTH, Secretary.

Mr. Crawshaw said that he had occupied much of his time with the perusal of these documents; but he had done so because they had seemed to him so complete and telling that argument of his own would be comparatively ineloquent. It might, however, be reasonably asked what had been the result of all this legislation, and for answer he would refer them to the B.B.J. for April 7, where they would find a translation of Herr Leuenberger's report on the two years' working. He might, however, quote the concluding paragraph of this, in the hope that those who had not read the report itself would take the trouble to do so, as it would well repay and encourage them.

With regard to the financial part of the scheme, the insurance compulsory for all members of the association did not pay for the cost entailed, but that was not the primary object of it, which was at all costs to exterminate the disease. The Government, however, came to the assistance of the society and made up the deficit. So convinced was the Agricultural Department of the utility of the work, and realising the powerlessness of the society to enforce the examination of the colonies without police powers, that the Federal Government has now granted them such powers under the Contagious Diseases of Animals Act, so that it is hoped before long to rid the country of the scourge that has hindered the industry for so long.

It might be asked: How did all this affect us? How did we stand with regard to it? Can we not do as our Swiss friends have done, and that soon? We are often counselled to go slowly—and he was a firm believer in that principle—but we had already gone slowly sufficiently long to justify us in taking these next important steps. It was a law of Nature—if such things existed—that progress should be slow: First the blade, then the ear, after that the full corn in the ear. First the clean-cutting surgical blade—not the devastating sword of vengeance; but yet, if it were a choice between pestilence and the sword, he would counsel acceptance of the sword. It was on record that the offer was made to an old-time king, who chose pestilence, with the result that there fell of his people 70,000 men. Would not these soldiers, had the choice been theirs, rather have fallen in battle than have wasted into a dishonoured grave? Our people—our bees—had wasted at noonday and at night too long, and their defiled bodies had been buried, only to produce perhaps a recrudescence of the plague when the careless spade should desecrate their tomb. Then the ear, turned at present so deafly, charmed we never so wisely—we should perhaps gain his willing ear and ready acquiescence if we could show our obdurate friend the blade fitted to our hand. And the full corn in the ear, should we not sow to reap this? The full harvest of bees and wax and honey, undepreciated by the scourge we all deplored—disease, which would one day find us also united in our plan of campaign against it. For we must be united. If we were to obtain the Governmental powers which we needed we must first be agreed amongst ourselves. God was said to help those who help themselves, and, whatever might be said to the contrary, Governments were very like God in this respect. But we must, he thought, make some kind of noise, even if it be only to breathe hard, whilst we were self-helping. (Laughter.) He hoped the shade of Samuel Smiles was not listening. The uses of advertisement had perhaps increased somewhat since his day. But we must rely upon ourselves.

First we must, he thought, unite in obtaining a Foul Brood Act, and then we must inaugurate our insurance scheme. The sequence was not essential, though the experience of our Swiss friends showed its advisability. The two things should really go hand in hand. We could not have a complete insurance scheme without means of controlling the disease, although he could not help thinking that a probability of compensation would have removed most of the objections which were urged against a Bill at the time of the recent ill-fated attempt to obtain it. Now was the time—now whilst fresh interest was being aroused in the matter—for us to unite. We should not deliberately walk in darkness. We had the light for so short a time that we should make the best use of it, if it were only for ourselves and our advantage, and not at least equally for the benefit of those who are to follow us. In the words of Helen Keller, that wonderful blind girl:

"Out of the uncharted, unthinkable dark we came,
And in a little while we shall return again
Into the vast, unanswering dark."

(*Continued next week.*)

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of April, 1910, was £7,371.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION.

MR. ISAAC HOPKINS'S EXPERIENCES.

[7813.] I was much surprised on reading my copy of the B.B.J. of January 27, which has just come to hand, to find one of your correspondents, Mr. Thos. J. Horsley (7732), express himself as being very antagonistic to legislation in connection with bee-diseases. Had he been a novice at bee-keeping one might have thought his antagonism the result of want of knowledge, but "after keeping bees all his life," which suggests an intimate knowledge of the business, I cannot account for his opposition.

Possibly Mr. Horsley is not aware that bee-disease legislation has now been adopted in twenty-three States and Territories in America, in Canada, Cape Colony, the Transvaal, Australia and New Zealand, and in some countries on the Continent of Europe, and where in the countries mentioned no legislation at present exists the bee-keepers are agitating for it.

It may interest Mr. Horsley and others of your readers to give briefly the results of such legislation in New Zealand. Modern bee-culture was introduced into this country in 1878, and during the first few subsequent years it was taken up all over the Dominion in a most remarkable manner, promising to develop into an important industry, as the climate and flora were so suitable. In 1885 foul brood had spread to an alarming extent, so much so that in 1888 it had become so serious that the best of our bee-keepers became disheartened by the uphill fight they had against it, and asked for legislation to compel the careless and in many cases wilfully careless bee-keepers (chiefly box-hive men) to either destroy their bees and boxes, or take steps to cure their bees. This legislation did not eventuate, and the consequence was that commercial bee-keeping died down to almost zero, and remained in that condition till 1905, when the Department of Agriculture gave the industry its support.

I had the honour of being asked to take the first steps to place bee-culture on a sound commercial basis, if possible, and in January, 1905, I commenced the work by forming bee-keepers' associations in different parts of the country. I may say that my appointment was the signal for renewed energy among the old bee-keepers, for they knew legislation would soon follow. Late in the following year everything was ripe for legislation, and an Act was passed, but as it was a kind of compromise with box-hive bee-keepers it lay in abeyance till the 1907 session of Parliament. Nothing less than the compulsory use of frame-hives was satisfactory, and that, thank goodness, forms the spirit of our Act.

Now as to the result. Some districts that were absolutely rotten with foul brood less than three years ago are now clean; box-hives, together with the careless bee-keepers, are fast disappearing; the industry is expanding at an enormous rate, and satisfaction is expressed generally. We have practically had no bother or trouble in carrying out the provisions of the Act, although in some districts we have been compelled to burn 25 per cent. of the bees and hives. No compensation is allowed, and rightly so, I think; for why should a person be compensated for being compelled to give up being a nuisance and a danger to his neighbour? It is estimated that the output of honey and beeswax has more than doubled in four years; this means, if correct—and there can be little room for doubt—that we now produce about 900 tons of honey and 28 tons of beeswax.

The reason, I believe, that Canada and the United States have not made more headway against disease is that they still allow the box-hive to exist.—I. HOPKINS, late Chief Government Apiarist for New Zealand.

[7814.] May I refer again to Mr. Woodley's criticisms (page 167, 7802)? I agree bee-keeping is a very old industry, "the oldest under the sun" we are told, and I like to believe this. My thoughts of bees often take me in fancy away back to long before the days of the Patriarch referred to by Mr. Woodley—to the halcyon days of the Garden of Eden itself, wherever that may have been, when Adam and Eve roamed in blissful innocence, where "God made to grow every tree that is pleasant to the sight and good for food." We do not read of bees being there, but we have reason to believe that they were on the earth before man, and I never doubt that one of the sweetest sounds in Eden was the humming of bees as they took toll from the blossoms of the trees and the flowers, and in return performed the part they were created to accomplish—the fertilising of the blossoms, so that seed might form to "increase and multiply" their kind upon the earth.

When bee-keeping became a "craft" we do not know; neither do we know when foul brood first appeared, but there is reason to believe that it was known long before it was named foul brood by Schirach in 1769. If Mr. Woodley be correct in blaming the present generation —and his words seem to imply that—for the wholesale spreading of bee-diseases, then by all means let us in this country stop, and hand down the industry to our sons and daughters free from this reproach cast upon the present generation by Mr. Woodley. The present generation has done more for bee-keeping the world over than was ever done before, and is steadily advancing in the science and practice of the craft, but in this country we lag behind even our sister-isle in united effort to stamp out disease. I confess I am at a loss to understand the opposition in this matter. Mr. Woodley expects a spread of the new disease, *Nosema apis*, if experts are allowed to go from apiary to apiary. All the evidence that can be collected from any part of the world shows that where experts have been most active the greater the reduction in the number of cases of disease. A letter written some years ago by Mr. E. R. Root to the late Hon. Sec. of the Cumberland Bee-keepers' Association contained this forcible sentence: "Had it not been for the legislation in some of the States bee-keeping would have been wiped out entirely."

The contention that experts as a body are sowers of disease is too grotesque to be taken seriously: their works disprove it. Mr. Woodley asks: "If so much has been accomplished by the C.B.K.A. during the past few years, why ask for arbitrary powers?" Because we object to go on spending money year after year simply to satisfy the whims of a few who wilfully propagate the disease and spread it about, regardless of the disappointment and loss to their unfortunate neighbours. We have taught bee-keeping to scores of people, and made bee-keeping possible where it was impossible before. Now we want to give confidence to those who are engaged in the craft by making it impossible for anyone to introduce disease unhindered, or to keep it alive in districts where we know it exists at present. We have proved that the disease can be controlled, and we are justified in asking for power to control it.

I have to thank Miss Millard for her correction (page 169) of my mistake with reference to her not having disinfected after handling bees suffering from *Nosema apis*. Her ideas and my own seem to coincide as to the necessity for disinfection, and I can only say that if there exists a disease amongst bees so contagious that proper disinfection of the person, clothing, tools, &c., after handling is of no avail in preventing the spread of that disease, unless we get compulsory power of destruction our bees are all doomed.—G. W. Avery, Heads Nook.

[7815.] As a bee-keeper of ten or twelve years' experience, I should like to say that I think legislation against foul brood is likely to do far more harm than good, and it would hamper the industry far more than the present trouble with foul brood.

Any bee-keeper who is also a pig-keeper will know how hardly the Swine Fever Act often presses, and I think that the present scarcity of pigs, resulting in high prices for pork and bacon, is very largely due to the restrictions of the Act. There must, I think, be many bee-keepers in the same position as myself. Foul brood attacked my apiary years ago, and I have it with me still, but with care I am able to keep it from doing much harm.

Our county expert examined all my hives one year, and said, "Well, if I had no more foul brood than that I should have no fear." Still, it is there, and I suppose with legislation all these hives would be condemned and only part of the value paid in compensation. I depend partly for my living on my apiary, and under present management it gives a good return, in spite of a certain amount of disease. In my case legislation would do me a very great deal of harm and cause great loss.—A Cambs Bee-keeper.

[7816.] I have taken the B.B.J. ever since I commenced bee-keeping. I have only seven hives, but I enjoy my Journal; and I love my bees, and try to take care of them. I must, however, say I am dead against legislation for foul brood, as I think we are far too much legislated for, and I am quite certain should the State interfere in the bee-industry it will drive out all small bee-keepers, myself among the number; and I quite agree with Mr. Woollard and Mr. Thompson (see B.B.J. of April 21). I do not for a moment suppose that legislation will rid the country of foul brood, and I think it would be far more to the purpose if we could have an association in every county, with one or two experts, who would help and advise us in times of trouble. I cannot imagine anyone so ignorant as to prefer sick bees to sound ones. I know there are associations—one in this county—but it is all of no use unless one can have a visit now and then from an expert. I belong to this association, but last year I had no end of correspondence before I got the expert to pay me a visit in May. I found it impossible to get a visit from

him in the autumn up to November, and as I had packed up my bees in October for the winter, I did not see what good opening them up again so late would do. A friend of mine, who also belonged to the association, has withdrawn, she told me, because, after fruitless endeavours to get the expert, as she was leaving home for a month she wrote him not to come, as she would be away. He came and opened out all her hives in her absence. The visit, needless to remark, was of no use to her and of no use to the bees, so she has given up subscribing. If we could work up our associations, and get help when needed, it would be better than wrangling over legislation.—A. GALE, Rayne.

NOTES BY THE WAY.

[7817.] I have no improvement in the weather to report. It continues much the same day after day—dull and stormy, with very little sunshine—and of the bees that venture forth for the needful food to sustain the growing population of the hives many never return home. The approaches to the apiary have been strewn with laden bees, their pollen-baskets packed full. In seasons of sunshine and shower the warmth of the sun revives the unfortunates that the showers have beaten down, but this season we get so little sunshine that there is no chance of the bees recovering the use of their wings, and they perish by hundreds. A neighbouring bee-keeper told me his wife had picked up seventy bees in their garden path one afternoon. These were put in a cardboard box, with a piece of glass over the top, and placed near the fire, and they soon revived and were enabled to reach the hives.

If the weather continues cold and unsettled, give some help to the bees whenever you think it may be required. I give a little food in a shallow milk-pan when we get half an hour's sunshine, and in the feeders if it is wet. In open-air feeding the strongest stocks get the lion's share, as the weaker ones have not the large field-force ready to take advantage of the supply of food provided.

The present time is the best for keeping down the number of wasps by destroying every queen that is seen. I have killed a good many found inside the roofs of my hives, and by turning up the cover they can be easily killed in the evening, when in a dormant state.

Thanks, Mr. Patchett (7811). I should resent having to overhaul my two apiaries in the presence of an inspector as much as I should the said inspector doing it himself. Who would pay me for the time spent in overhauling two large apiaries to please the whim of a stranger? Mr. Patchett must know that the majority of bee-keepers will not have a voice in deciding "Yes" or "No" in the matter of foul-brood legislation, as so many are not readers of bee-literature.

Regarding the Irish Foul Brood Act, a new leaflet has just been issued by the Irish Agricultural Department. The Act was not sufficient for the inspectors. A friend in the Emerald Isle has just sent me a copy of the Act and the leaflets issued with it, the latest of which confers greater powers on the inspectors.

Mr. Crawshaw's comb-fumigation (page 179) is, I have no doubt, thorough, but I should think if a pile of the racks of combs were raised on a box, and a sulphur candle burned underneath, care being taken that the fumes are not allowed to escape, the germs (if any) would be destroyed. Paper strips could be pasted over the joints and a piece over the top rack. This is a cheap method, and is considered efficient enough to destroy fever germs by sanitary authorities.

Re *Nosema apis* and flowers, I remember the late Mr. Frank Cheshire, in one of his lectures, stated that he thought it possible that a bee from a foul-broody hive may leave germs when visiting a flower, and another bee may carry the disease back to its hive on visiting the flower afterwards. This assertion, both then and now, requires a big grain of salt to swallow. There is no comparison between rabies and foul brood. The dog can be controlled, but not the bee. Swine fever will never be stamped out, for, if it were, the inspectors would, like Othello, "find their occupation gone." This is the opinion of one of the largest bacon-curers in the South of England.

Re skeps. An old bee-keeper told me last week she always had good luck with her bees, as she took up the heaviest and the lightest hives every year, and always liked to leave as stocks to stand the winter those not more than two years old—*i.e.*, swarms of the previous year that had swarmed. Then she had some good early swarms. This old lady had never read a bee-book or seen a bee-journal.—W. WOODLEY, Beedon, Newbury.

WIRING FRAMES.

[7818.] With reference to Mr. Crawshaw's remarks (page 149), I would like to ask him, if two wires are enough, why use four? I write only from practical experience, having proved that, however many wires are used, they will sag, and the foundation at the lower angles buckles. I usually cut off a wedge $\frac{1}{4}$ in. tapering to $1\frac{1}{2}$ in. long, and in this way get *absolutely straight combs*. My bottom bars are $\frac{3}{8}$ in. by $\frac{1}{8}$ in., and so nailed as to give them an upward bend; then,

with a clear ½ in. below them, combs are drawn down and attached to those bottom bars. I notice that with the usual ½-in. space between bottom bar and comb the bees round the angles of the ⅜-in. bar. I prefer to round them slightly before use with a bit of coarse sand-paper: bees seem to dislike sharp angles.

Foul-brood Legislation.—I quite agree with Mr. Woodley on this point, but in case of any Bill passing there ought to be a clause or proviso such as this: "That any bee-keeper who is known to be an expert, whether certificated or not, who shall give a guarantee that his bees are free from disease, his bees shall be exempt from inspection by inspectors." It would never do to put officials in the position of the wolf in the fable of the wolf and lamb.—A. HARRIS, Wavendon.

GLOUCESTERSHIRE B.K.A.

ANNUAL MEETING.

The first annual meeting was held at the Wessex Hotel, Gloucester, on Thursday, April 7, at 7.30, where Mr. G. Walker presided over a good attendance. The report of the previous nine months was then read by the Secretary.

The association was started at a meeting held in Gloucester on June 22, 1909, when Messrs. C. L. M. Eales, G. Pugh, and W. Herrod, the representatives of the B.B.K.A., and some twenty bee-keepers of the county met, and decided to start an association. A committee was formed, consisting of Messrs. E. J. Burtt, J. C. Calvert, Wm. Workman, and the Hon. Secretary, who subsequently invited Rev. F. H. Fowler to join them. During the remainder of the year the efforts of the committee were confined to making the existence of the Association known by holding meetings in various centres, besides sending particulars to all bee-keepers whose addresses could be obtained. The association has been fortunate in securing for its President Mr. Chas. Bathurst, M.P., of Lydney Park, a gentleman known throughout the county for his interest in rural pursuits. At present there is a membership of forty-five, and sixty or seventy others have promised to join. This result, following three very bad seasons, may be considered good, giving ground for believing the association will prove a success.

The Treasurer's statement of accounts (the years 1909 and 1910 will be treated as one) showed a credit balance of £5 15s. 10½d.

The President was re-elected, as were also the committee, with the addition of Messrs. W. F. Peck and H. T. Critchley.

A discussion ensued on the question of forming local branches. Mr. E. J. Burtt and Rev. F. H. Fowler were appointed joint-secretaries for Gloucester; Mr. Calvert was suggested as Secretary for the Cheltenham, and Mr. H. T. Critchley for the Stroud district.

Rev. F. H. Fowler proposed "That this meeting is in entire sympathy with the efforts made by the B.B.K.A. to pass an Act for the suppression of foul brood," which was carried unanimously.

The meeting concluded with a vote of thanks to Mr. G. Walker for presiding and to the Hon. Secretary.—(*Communicated.*)

Bee-Shows to Come.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B.B.K.A. Prizes arranged in groups of counties for Associations affiliated to the B.B.K.A. Schedules from W. Herrod, Secretary B.B.K.A., 8, Henrietta Street, Covent Garden, London. **Entries close May 31.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

Notices to Correspondents.

G. (Midhurst).—*Transferring Frames to New Hive.*—If you refer to page 98 of "Guide Book" you will find full instructions for handling frames. Move the old hive to one side, and put new one in its place. Then proceed to take out the frames, one at a time, and put them in the same position in the new hive. Any bees adhering to the hive can be brushed on to the alighting-board. Be careful to remove the queen and not injure her in the operation.

E. T. (Strand, W.C.).—*Material for Quilts.*—1. Bees will eat through quilts sometimes, especially if made of dressed calico. 2. No, it is not porous; therefore moisture condenses on the underside. 3. Being an alcoholic beverage, a licence is required to sell mead. We cannot give you the address of a maker. You might make it yourself from directions given in the Rev. G. Bancks's pamphlet, "Mead and How to Make It," price 2½d., post free, from this office.

NOVICE (Swanage).—*Loss of Queen.*—You will not have to wait three weeks, as one of the less advanced queens will be allowed to hatch out.

V. E. S. (Finchley).—*Quality of Mead.*—Sample is an excellent mead for its age. It will certainly improve with keeping and will be of splendid quality when fully matured in about three years.

B. W. D. (Sheffield).—*Bees Robbing.*—When bees are short of stores robbing is

likely to ensue. You do not say if the immature bees were cast out from one of the new hives or from one already there. If the former, the brood has been chilled in moving; if the latter, it has been caused by shortness of food.

NOVICE (St. Ormesley).—*Candy-making.*—The candy is well made, but has gone a little hard on the outside. The moisture and warmth of the hive would probably do away with this defect when using.

W. H. S. (Bushey).—*Bees Refusing Syrup.*—The syrup is rather thin, and contains too much acid, also bees will more readily take syrup made from refined cane sugar; but the probable cause of their not taking it down is because they do not need any.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

NEW BAR-FRAME HIVE FOR SALE, 12s. 6d., or exchange Bees or Honey.—ISAAC, Lynton, Green-road, Bournemouth. z 20

WANTED, 2-Frame Extractor.—Particulars, BILL, Havering-Well, Romford. z 62

SWARMS.—Wanted, 20 Natural May Swarms, English Black Bees. State price.—W. BAILEY, Newlands, The Avenue, Watford. z 76

BEES FOR SALE, in Bar-framed Hives, with or without Hives. Price according to Hive selected.—HOBBS, Camlot, Barnet. z 75

2 SILVER WATCHES, £1 each, or exchange strong healthy Stocks.—KEY, Godalming. z 63

220 COPIES OF B.B.J., 1906 to 1910. The lot sent carriage paid for 10s. — MULLIS, Egerton, Kent. z 65

STRONG NATURAL SWARMS, ready end of May, weather permitting, English Bees, selected, Honey gathering strain, 12s. 6d. and 15s. each.—NORTH, Cressing, Braintree, Essex. z 70

FOR SALE, Freehold Cottage, six rooms, half acre of land, with 30 Stocks of Bees, some empty Hives, and all appliances, cheap to quick buyer.—PRITCHARD, Micheldever-road, Andover. z 69

4 GOOD SECONDHAND 21s. EXTRACTORS, will accept 12s. 6d. each, worth much more; also 4 empty Double "Wells" Hives, good condition, 9s. each.—HARRISON, Rosslyn House, Westgate, Pickering. z 68

BEES FOR SALE IN CHESHIRE.—Choice of 20 Stocks, guaranteed healthy, 1909 Queens, good combs, 1 Doolittle, 6 Hybrid Carniolans (Baldwin's), rest Blacks (late Mr. Cottrill's strain), without Hives from 20s., with Hives from 27s. 6d. May be personally inspected. — BROOK, grocer, Bowdon. z 64

Special Prepaid Advertisements.—*Continued.*

EXTRACTOR, takes 3 Standard or 3 Shallow Frames at once, 13s.—HEATON, Methwold, Norfolk. z 67

1 CWT. ONLY FINEST LIGHT EXTRACTED HONEY, in 28 lb. tins, carriage paid, 70s.; sample, 2d. Cash with order.—CHARLES H. BOCOCK, Ashley Apiaries, Newmarket. z 72

A BARGAIN.—3 strong healthy Stocks of Bees, in new 12-Frame Hives, invertable lifts, well Super, 2 Shallow Frame and 1 Section Crate, 1909 Queens, 28s. each, or with crate of 10 shallow combs, 30s.—T. WOOD, 10, Park-street, Shipley, Yorks. z 73

WHAT OFFERS? 20 Racks Drawn-out Shallow Frames, used once, also 200 Brood Combs, cheap to clear, guaranteed healthy.—SOUTHCOTT, Gittisham, Honiton. z 39

BOOK SWARMS NOW, 2s. 6d. lb., English Bees.—WENT, Riverside, St. Osyth, Colchester. z 43

STRONG TRANSPLANTED TOMATO PLANTS, Up-to-Date, Holmes' Supreme, Laxton's Open Air, 1s. dozen.—GELDER, Sturton, Lincoln. z 61

WANTED, rent small Farm, or purchase small holding, Bee district, Midlands.—SOCKET, 4, High-street, Newport Pagnell. z 22

MOLESKINS Wanted, square dried, all the year round.—MARSHALL, B.J., Worcester Park, Surrey. y 93

FOR SALE, 14 Stocks, guaranteed healthy, in "W.B.C." Hives, mostly new last season; sacrifice 36s. each.—T. RULE, Summervale, Annan, Dumfriesshire. y 97

SEVERAL GOOD SOUND SECONDHAND HIVES, "Combination" and "Cottager" patterns, repainted three coats, fitted with ten new Standard Frames, and dummy, 6s. each.—F. E. MATTHEWS, Cofton Apiary, Northfield, Birmingham. y 82

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

33RD YEAR.—Swarms, Nuclei, Queens as heretofore, imported Italians, 7s.; home raised, 5s. Particulars on application.—E. WOODHAM, Clavering, Newport, Essex. z 60

STRONG NATURAL SWARMS, guaranteed healthy, 12s. 6d., packed, safe delivery.—CADMAN, Codsall Wood. z 71

STRONG STOCKS, on 8 combs, wired, 1909 Queens, written guarantee that they are free from Foul Brood or any other disease, 25s.; cases 4s., returnable.—W. ROBERTS, Bee-keeper, Winfield, Battle. z 29

ITALIAN QUEENS DIRECT FROM ITALY.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," May 5.

250 SWARMS WANTED.—E. H. TAYLOR, Welwyn, Herts.

STRAW SKEPS.—Send 1s. 1d. for sample.—H. SEAMARK, Willingham, Cambs. z 74

QUEENS.—Brice's reliable strain, in speciality introducing cage, 5s. 6d.—BRICE'S APIARIES, Otford, Kent. z 66

PRIME NATURAL SWARMS, 1909 Queens, from 4 lb. to 7 lb., 3s. lb. till June 15th; 16th till 30th, 2s. 9d. lb.; July, 2s. 6d. lb.; healthy, safe arrival guaranteed, cash with order; empty boxes to be returned.—S. BAILEY, Two Mile Ash, near Horsham (late Itchingfield). z 57

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

CONVERSAZIONE.

(*Continued from page* 187.)

Mr. Cowan said he was sure all were very much indebted to Mr. Crawshaw for his able paper, which has dealt with the work done in Switzerland, from which country Mr. Crawshaw had just returned with all the latest information. The Swiss bee-keepers have set us an example of how they can do these things. They have an association of over 7,000 members, who are all united. He wondered whether, if a Foul Brood Act was passed in this country, all our county councils would take the matter up as readily as the Cantons had done in Switzerland. He invited those present to give their views on the subject.

Colonel Walker said that the admirable scheme which Mr. Crawshaw had so clearly explained possessed very great attractions, but he did not feel certain how it could be applied in this country, because, as the Chairman had just said, it needs thorough combination. It is obvious that in Switzerland, as well as other Continental countries, bee-keepers join together with extreme readiness. They form a large association, they take a lot of trouble, and it seemed to him almost a matter of common agreement that all who keep bees should join an association. As things stand in this country, he could hardly see how such an Act could be carried out, because there were so many who would stand aloof. This all shows the necessity of combination. Also, as far as he understood it, the Swiss scheme had an enormous advantage over the propositions that have been made before for similar Acts in this country. It is a very great advantage that it is applied universally, though it may be administered by different Cantons, and it is obvious that no scheme dealing with those possessing bees can actually be effective unless it deals with the whole country. With regard to compensation, the plan is an exceedingly good one. The idea that everybody whose hives were destroyed in the interests of the public must be compensated by Government was, he thought, a totally mistaken one. The Swiss appear to avoid this by exacting a tribute from every bee-keeper, and the sum raised by these means would, as a rule, meet the general expenses. It appears to have fallen short this time; but that is natural with the inauguration. It is obvious that the expense would decrease after the first outlay, consequently a small contribution on the part of every bee-keeper would meet everything that was required. The great thing to avoid, if such a scheme were started, was to expect the Government to provide compensation, because that would make them far more unwilling to pass an Act. If bee-keepers could get together first and agree to this small contribution they might then go to the Government, and no doubt the Agricultural Department would be ready to help in case of real need.

Mr. Sander said what struck him in making comparison with Continental countries was the natural disinclination in this country to be "bossed" by officials. From his own observations he found that on the Continent they do not seem to mind it, and they find it works very smoothly. In this country the difficulty was that we objected to inspection, particularly if it was compulsory. That seemed to him to be the difficulty in inaugurating any compulsory scheme, as you had to get the people to be willing to agree to it first.

Mr. Sinfield thought if we could not have compulsion there would be no remedy for foul brood, because the inspector must have power to visit every apiary. In his own neighbourhood there were from forty to fifty fairly good-sized apiaries, and he thought that in several of these the owners did not even know what foul brood was. They get excellent stocks which appear to be overflowing with bees; in June they have dwindled right down. He had known several such instances, and had asked these bee-keepers what they were going to do. On inquiring if it was their intention to destroy the diseased stock, they replied by asking who was going to pay the expense. Yet his bees might go and rob that weak stock, and here was he, a bee-keeper with eighty stocks, suffering because his neighbour was allowed to do just as he liked. The law did not allow him to have this diseased stock destroyed. There are many ignoramuses around who will not listen to reason, even if you go to them in a friendly spirit, and he thought it would be to the interest of bee-keepers to have compulsory measures where this was necessary. He thought the Swiss plan a good one to adopt.

Mr. Lamb said the only thing he would like to say in regard to Mr. Crawshaw's paper was that it was the strongest possible argument for having a strong association, and he hoped that as many as possible would be present to consider the reorganisation scheme of the Council in a fair spirit. He would like to say that the Council were most anxious to have suggestions in regard to the scheme, and he hoped those present would not vote with the impression that they must not offer suggestions. No scheme is perfect without alteration, and he did hope that the

members would realise that we must have a united scheme. We want, if possible, to go to the Government and speak in the name of 6,000 or 7,000 members, and not in the name of the British Bee-keepers' Association only. He would like again to emphasise the point that they would welcome any suggestions for improving the scheme, which will come before the meeting next month.

Mr. Salmon thought the great difficulty was the fear of the inspectors carrying the disease. At the last Conversazione he made the suggestion that inspection should be made under the Animal Diseases Act, which would perhaps be more workable than the other suggestion. He thought there would be no reason why the other plan of inspection should not be adopted. In many cases he thought bee-keepers would be glad to know whether disease existed among their bees or not, and if they knew that there was an inspector who could be called in they would readily send for him. There were some people who would object, no doubt, but as they became educated in these matters of disease he thought they would be quite prepared to adopt the regulations made, because they would find that diseased stocks were not only of no value to themselves, but were necessarily injurious to other people.

Mr. Edwards thought there was no question about an Act being necessary in this country. It was somewhat singular that the opposition arose from some of the largest bee-keepers, and one of the foremost was Mr. William Woodley, whose principal objection was that a foul-brood inspector might want to disturb the hives when they were supered. The idea was that the inspector would come round and out of pure cussedness pull the hives about. This was a ridiculous argument, and he opposed it. Of course the first thing was to find out the general opinion upon the matter. Cumberland has already taken a census of its members, and in Bucks the same thing was being done. They were having an annual meeting on the following Saturday, and voting papers had been sent to every member asking them whether they were for or against a Foul Brood Act. He thought if a suggestion could come from that meeting they would have something upon which to go to the Board of Agriculture. As to people liking, or disliking, having their hives inspected, he found very little trouble himself. His work was paid for by the Bucks County Council, and in very few instances had he found the slightest objection to allowing him to do precisely as he liked with the hives. But there was generally one ugly person in the district who would stick out. Of course we liked to brag of our freedom, and we did not like to be coerced. He thought, however, it would depend a good bit upon the class of man appointed as a foul-brood inspector.

Colonel Walker said, before Mr. Crawshaw replied, as he would no doubt be kind enough to do, he would like to ask whether the Swiss authorities have taken any steps in regard to the dwellings of bees; that is to say, how they deal with bees in skeps or boxes which are so arranged that it is practically impossible to make inspection. Most of those present were aware that in New Zealand this point has been dealt with by making it illegal to keep bees in anything but movable-comb hives. He did not gather that anything had been done in that way in Switzerland, and he would be glad to know.

Mr. Avery said that many people who object to legislation form an opinion from a want of knowledge of the matter, and look at the question from the point of view of their own interests. He was quite sure that experts who had been in the habit of going about the country and examining small bee-keepers' apiaries would agree with him when he said that unless we have compulsory power it will be quite impossible to stamp out foul brood, or even to decrease it more than has been done at the present moment. Mention had been made of the census taken in Cumberland. Did not that census show that when bee-keepers are asked as a body to give an opinion on the question a great majority are in favour of legislation? He thought that the Board of Agriculture, if he understood correctly, have partly promised that if a majority could be shown in favour of legislation they would proceed with the framing of a Bill. If all the counties would follow the example of Cumberland and canvass their members so that the bee-keepers in each county could give their vote for or against legislation, we should arrive at some idea as to what the general feeling of the country was on the matter. He thought it ought to be put clearly before them, and each committee should be asked to undertake to canvass the members and get their votes. With regard to compensation he was inclined to agree with Colonel Walker that to go in strongly for this would be against securing compulsory power from the Government, who would be opposed to increasing the rates or taxes to pay for compensation towards the destruction of diseased stocks of bees. The question may arise: "Is a diseased stock of bees really worth anything at all?" He was of the opinion that it was worthless; in fact, it was a standing danger to the bees in the neighbourhood. He would like to ask all secretaries kindly to

consider the question of taking the votes of their members, so that in that way some idea may be obtained of the opinion of the country on the matter.

Mr. Furse said that the consensus of opinion in Devonshire was entirely in favour of legislation. As far as those he had come in contact with were concerned all would be most willing to have their hives examined and to carry out any instructions. But of course the association was limited, and did not come into contact much with the large number of those ignorant bee-keepers who would object, and it was simply through ignorance that the disease was spread. When the last attempt was made to get a Foul Brood Act passed the Devon B.K.A. received a grant of £150 a year from the county council, which enabled them to have every bee-keeper visited, and much good was done in instructing bee-keepers respecting the nature of the disease. The County Council was in favour of the Bill, but when the effort failed the grant was withdrawn on the ground that it was useless to spend public money on such a small industry as bee-keeping. Since then a small grant had been obtained to give lectures, but the association had never resumed its former position, and they would be only too pleased to have legislation, which he was quite sure his council would welcome, and support any attempt that was made with that object in view.

Captain Sitwell thought all who knew him would know which side he took and the arguments that he had used. Those who like can read them in the B.B.J., but there was one letter written by the late Mr. Harris in September, 1904, that he would like to have reprinted, because in that letter Mr. Harris summed up the whole situation, and proved that the arguments against legislation were all bogeys. If you look at these arguments against legislation by the light of common sense they were nothing but bogeys. He had something to do in participating in the present state of affairs, because he was pleased to say that Sir Edward Grey was a member of his association and a personal friend. Sir E. Grey was a very busy man, and as he had not time to look after his own bees he (Captain Sitwell) looked after them for him. They had talked about foul brood many times, and on asking him whether something could not be done, Sir Edward introduced him to Lord Carrington, who, knowing nothing about bees, had armed himself at the interview with all the papers relating to previous attempts to obtain legislation. The interview was rather embarrassing, and he determined next time to get their Chairman to go with him. When Mr. Cowan accompanied him the reception was a very different one. They were listened to very favourably indeed, and were asked to produce a majority in favour of legislation, which would strengthen the hands of the Board of Agriculture in dealing with the matter. He thought the next meeting in May should be a strong representative one, when their duty should be to go into the whole matter and advise what steps should be taken in this direction. It depended entirely on the secretaries of the counties, who, in the meanwhile, should get together such a consensus of opinion. At their association meeting he was glad to say they plumped solid in favour of legislation, but he was not content with that, and was sending out cards to get at outside bee-keepers who had not joined the association yet.

(Concluded next week.)

LEICESTERSHIRE AND RUTLAND B.K.A.

ANNUAL MEETING.

The annual general meeting of the Leicestershire and Rutland Bee-keepers' Association was held at the Highcross Coffee House, Leicester, on Saturday, April 9, Mr. E. J. Underwood, Chairman of the association, presiding over a good attendance, nearly a hundred members being present.

The report stated that notwithstanding that last year was unfavourable, and a disappointing one as regards the honey crop, the association was still in a flourishing condition, and good work had been done to assist the cause of bee-keeping. The membership of the association totalled about 321, and considering the three successive poor seasons for bee-keeping, it must be considered very satisfactory. The financial position of the association was again good, the balance in hand having increased to £7 12s. 8d. The demand for the county honey labels had been very satisfactory, 5,600 having left the secretary's hands.

The Chairman, in moving the adoption of the report and balance-sheet, said they could congratulate themselves on the continued increase in the membership.

The secretary (Mr. John Waterfield) advocated the holding of conversaziones at Ashby, Loughborough, and Melton Mowbray.

Mr. A. E. Briggs seconded the adoption of the report. This was unanimously agreed to.

The retiring officers having been thanked for their past services, Mr. W. P. Meadows proposed the re-election of Lady Levy as President. The proposition was unanimously agreed to.

Mrs. Perry Herrick, Mrs. Copus, the Misses Levy, the Marquis of Granby, Sir John Rolleston, M.P., Sir Humphrey de Trafford, Bart., Sir Maurice Levy, M.P., and Messrs. J. W. Bickley, E. H. Warner,

C. E. de Trafford, L. T. Topham, W. C. Burder, G. O. Nicholson, T. P. Jones, and R. H. Buckley were re-elected Vice-Presidents.

Other officers were elected as follows:—Chairman, Mr. J. G. Payne; Vice-Chairman, Mr. A. E. Briggs; Hon. Treasurer, Mr. W. K. Bedingfield; Auditor, Mr. E. J. Underwood; District Secretaries, Messrs. H. A. Wheatcroft, W. Dear, Hy. Bradbury, E. Varty, J. T. Lawrence, T. H. Geary, J. Waterfield, F. Hubbard, A. Brown, J. G. Payne, W. W. Faulkner, J. W. Smith, E. Pickersgill, and W. P. Meadows; Executive Council: Messrs. S. Clarke, J. G. Cotton, G. W. Dunn, J. Fewkes, J. Haywood, E. A. Jesson, G. J. Levers, A. J. Marriott, J. Thompson, A. Spencer, T. H. Wright, J. Halford, and W. H. Woods; representatives to the meetings of the British Bee-keepers' Association in London: Messrs. W. P. Meadows, W. W. Faulkner, and the Hon. Secretary. The Hon. Secretary, Mr. John Waterfield, was unanimously re-elected.

The members next discussed the proposed scheme for the reorganisation of the British Bee-keepers' Association. After several speakers had expressed their views on the matter, a resolution disapproving of the scheme was carried by an overwhelming majority.

During the evening Dr. T. S. Elliott, of Southwell, Notts, delivered an interesting address dealing with the scientific side of apiculture; and Mr. Walter K. Bedingfield lectured on "The Romance of a Bee's Anatomy," illustrating his remarks with lantern-slides. Prize drawings and honey competitions completed the evening's programme.—J. WATERFIELD, Hon. Sec.

BERWICKSHIRE B.K.A.

The twentieth annual meeting of the Berwickshire Bee-keepers' Association was held at Duns on April 16, Mr. R. Aikman, Vice-President, in the chair. Mr. R. Greig, secretary, submitted the annual report, from which it appeared that the honey returns for the county for last year showed the poorest result on record, a state of matters which was equally unfavourable in other honey districts of the British Isles and, it was believed, also over the four continents. The stocks were reported to have come well through the winter and to be now in fairly good condition.

AMONG THE BEES.

HONEY-DEW: A SECRETION.

BY D. M. MACDONALD, BANFF.

I am glad to be numbered with the optimists. I was aware our friend Colonel Walker did not agree with several of the statements in my original article, as we have had friendly inter-communications on the subject. No other article I have ever written has given rise to a tithe of the correspondence, both *pro* and *con*, which has followed that on honey-dew. As I have already dealt with the subject elsewhere, I will at present confine myself to three points. Aphides *do* suck up already *exuded juice*. If they can, siphon-like, suck up moisture from the internal pores of the leaves, why should they not be capable of imbibing the globules lying on the external part? That the cornicles have no direct communication with anything in the nature of a honey-sac is no sufficient guarantee that a secretion does not pass on to them. Professor Surface compares the secretion to the milk of the cow. Does any direct canal, tube, or orifice connect the stomach and the milk-glands? Yet the cow secretes milk. My pronouncement that the presence of aphides is due to the secretion of honey-dew is not "fantastic," but follows as a natural corollary, if they come to feed on the sweet saccharine exudation of the leaves. That I still maintain. But as the word of a mere private soldier has not the force of a leading officer, I will buttress my position by quoting such evidence.

The Chairman of the British Bee-keepers' Association knows as much about bees and bee-keeping, all the world over, as any living man, and his conclusions on this subject are as follow: "Although perfectly aware that opinions are divided on the subject, we believe with those who think it generally to be an exudation from the pores of leaves under certain atmospheric conditions, although it may sometimes be produced by aphides. At Howald, in Alsace, we watched bees collecting honey-dew, but found hardly any insects. This year we have seen lime-trees from which the sweet liquid was falling in drops, and yet very few insects were found. We have specimens of excellent flavour quite free from any admixture of fæcal matter."

On page 301, vol. xxvi., of the B.B.J., in an editorial, I find the following statements: "To remove a false impression in regard to honey-dew, let us say it is not the excreta of the aphis, but, on the contrary, is a saccharine substance which exudes from the surface of the leaves of trees and plants. Consequently, there is no real analogy between the two substances. The sweet juice of the aphidæ is ejected through two straight tubes, which no doubt gave rise to the entirely erroneous excreta notion."

The president of the French Bee-keepers' Association has noticed and described the production of honey-dew *without aphides* on many herbaceous

plants and on the following trees and shrubs: Oak, ash, linden, sorb, barberry, raspberry, poplar, birch, maple, and hazel. In some parts of Europe *this* honey-dew is so plentiful that some apiarists transport their bees to the districts in which it is produced. He (M. Gaston-Bonnier) writes as follows in "Les Nectaires": "The presence of plant-lice on trees has no connection with this nectar [miellée]. The excremental liquid of aphides is not equally sweet in all the species, and the bees harvest only that which is very sweet. They generally prefer the true honey-dew which *exudes from the leaves* at certain times, and contains mannite and saccharine matter."

"The true miellée of trees may fall in small drops, and some observers conclude from this fact that it is produced by aphides. I have, however, often seen some trees, and even all the trees of a wood, covered with an abundant miellée falling in small drops, although there was not a single louse on the higher limbs. We must not confound the true miellée produced on the surface of leaves without the action of aphides and the excretion, more or less sweet, containing very little sugar, produced by plant-lice."

The Conference.—I hope the gathering will "find a way or make it." Visionary dreams should be left behind in Utopia, and only hard, bare facts exploited in London. All delegates should concentrate on the points on which they agree, and endeavour to find a *via media* on all points of severance. The main procedure should centre round the attainment of a British Bee-keepers' Association in fact as well as in name. All county societies should, financially and otherwise, endeavour to raise the status of the central; while it must become to them something more than a name—a living reality—the heart, as it were, of one united body. To secure this it must become *representative* of the whole island, and be, as it were, in telephonic or telegraphic communication with every limb. The "operator" in London must be in active touch with every centre—north, south, east, and west. Every local association, while as independent as it need be, must feel it is not only a single unit, but an active, necessary limb of the whole body. Then no organ or part can say to another, "We have no need of thee," for each must play its part to secure success for the whole. The "chauffeur" (to change the simile) must be an active, intelligent, practical bee-keeper, and *well paid*. It were well if his whole time could be devoted to the Association, and not dissipated over half a dozen or more other offices. Only such an Association, backed up by the weight of numbers, can make its influence felt in dealing with a host of questions urgently demanding attention if apiculture is to be placed on a secure footing.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEES IN THE SOUTH OF SPAIN.

[7819.] After despatching my last letter from Gibraltar on March 8, I had still about an hour to wait before the ship sailed, so I thought I would get some samples of the honey sold here. After trying at several likely shops, but in vain, I at last came across a small fruit-shop, where honey could be had. It was sold in about 3-lb. and 4-lb. bottles, at 1s. and 1s. 6d. respectively. The honey was white, very thin, and fermenting badly, and as the tradesman refused to let me have a sample I did not buy any, as I did not want to carry a large bottle of fermenting honey about with me for the rest of the trip. I then tried a chemist's shop, and obtained a sample, which I enclose. This sells at 1s. 6d. per lb., and is considered the best honey, there being a great demand for it. It came originally from Seville, there being no honey produced in Gibraltar.

From Gibraltar we went to Malaga, and then on to Linares, in the province of Jaen, arriving on March 22. I saw plenty of bees and flowers, but no hives. The bees were *Apis mellifica*, and five kinds of humble-bees, including *Osmia*, *Bombus terrestris*, *Melecta punctata*, *Podalirius nigroeincta*. The flowers were iris, jonquils, rosemary, linaria, red ranunculus, candytuft, geranium (wild), poppy, fumitory, bryony, and beans. The hive-bees were working chiefly on the rosemary and beans.

From Linares we went on to the Centenillo mine, about thirty miles further north and about 2,600 ft. above sea-level. Up there we saw a few humble-bees, plenty of hive-bees, one apiary, and the following flowers: Cistus, vetch, heather (red and white), Star of Bethlehem, wild geranium, romulea, narcissus, anemone, and rosemary. The mountains are covered with this last-named, which seems very popular. The hills resound with the buzzing of the bees on this flower, and I do not think I came across a single shrub without seeing bees on it. If it could be grown in this country, it

might be worth planting on this account, as the bees do not seem to touch any other flower while this is in bloom. I took a photo of one shrub, which shows the very stony nature of the ground it flourishes in. Here I was not fortunate enough to come across a bee-keeper, but met two people who were interested in bees and had seen the different manipulations carried out.

First of all, I should say that my knowledge of Spanish is very slight, and in getting information from these people, as I did not always understand them, I asked if I might read over my notes to them, so that I might be sure that I had got hold of the proper facts. In both cases they said that this method was the proper one. The honey season lasts from February to the end of May, when the heat causes nearly everything to be dried up. Honey is extracted twice a year—in May and in the autumn. The hives are made of cork, are about 3 ft. 6 in. high, and in the form of a cylinder, having the section in the form of a semi-circle, the base being the back. They rest on a stone for the floorboard, and have a stone placed on the top as a roof. There are a couple of sticks pushed through the hive to support the combs. When taking off the honey the lid is first removed, smoke is then puffed in at the entrance, and the bees fly out of the top and around the hive. The bee-keeper then cuts out the top part of the combs and uncaps them, and places them in a bucket of hot water. The wax and honey separate; the wax, floating to the top, is then taken off, the honey being removed to another pail, where it is cleaned and then put in bottles, selling at 1 peseta a kilo—5d. per 1.1 lb. The bees then build up fresh honey-comb above the brood-comb. The narrator's brother, so he informed me, makes £80 a year from an apiary of sixty hives by extracting honey in this way. I give his description for what it is worth in the hope that some other reader who has studied bee-keeping in Spain would be kind enough to give us the true facts of the case, as I can hardly believe that the above is the general method of extracting in Spain. Unfortunately I was never at one place for more than two or three days, and, having business to see to, I had very little time for gathering much information.

From Linares we went back to Malaga. Here I saw some hive-bees and a few hives. The flowers in bloom were gladiolus, cannas, streptosolon, bugloss, orchids, purple solanum, *Anchusa italica*, yellow oxalis, borage, cistus, vetch, poppy, carnation, blue pimpernel, marigolds, freesia, roses, stocks, geranium, heliotrope, valerian, violets, asphodel, columbine, jasmine, furze, and lavender. I obtained a sample of honey, which I enclose, selling at 5d. per 1.1 lb. I heard here that the Moorish bee, which is smaller than *Apis mellifica*, is in great demand, that it works much better than the ordinary bee, is more prolific, gathers larger quantities of honey, but makes a greater use of its sting. Do you know whether this bee has been tried in England, and with what success?

To conclude, I will say that of the many flowers I have seen, rosemary, yellow oxalis, borage, valerian, and asphodel are liked best by the bees. They are grown in great quantities, and the only thing that remains to be known is what the honey obtained from them is like. The samples I send are: 1. From Seville, but bought in Gibraltar, at 1s. 6d. per lb. 2. From Malaga, selling at 5d. per lb. 3. From Jaen, 5d. per lb. 4. From Huelva, at 5d. per lb.—W. G. COATES.

[The Moorish bee is of no value in this country. It is a great propoliser and very vindictive. All the honey samples are of inferior quality, and would stand a poor chance of sale here. Rosemary honey, when obtained pure, has generally a nice colour and pleasant flavour, but none of the samples appear to be pure rosemary honey.—ED.]

FOUL BROOD AND LEGISLATION.

[7820.] I should like to have replied to several points made by "our friends the enemies" of legislation, but up to the moment time has been wanting. I have not seen the following challenged by other writers, yet they are so evident that I feel compelled not to let them pass.

Take first Mr. Woodley (7781). His references to swine-fever and Canadian legislation are sufficiently castigated by Mr. Avery; but I am much surprised that a bee-keeper of his experience should hold that skeps are a "sealed book." To the experienced there is always a suspicious dulness as to work, and even as to colour, in the inhabitants of a diseased hive. It is difficult to explain what it is—a *je ne sais quoi* appearance. But, passing this by, there is generally little difficulty in so separating the combs gently as to get some glance at the cappings, quite sufficient to tell the tale. Mr. Woodley also dreads that infection may be carried from one apiary to another by the inspectors. Sometimes in the slang dictionary one finds the word expressing the idea exactly—will you pardon me, Mr. Editor, if I say "What rot"? The argument, if applied to the medical profession and to nurses, would at once sweep them out of existence. If a doctor visits an infectious case he knows well the necessary steps to take before visiting his next patient; and so do we,

the bee-doctors, when we visit apiaries, know our business—or why are we sent? Because there are infectious diseases both in human kind and in other animals, are these for fear of spreading infection to be allowed to run riot and not to be controlled? Would any sane man advocate this? Wherefore are all our health laws? Again I repeat, I cannot understand the position assumed by non-legislators. Foul brood has been rife for many years, has had its own way and spread until it threatens to destroy our industry. Men of progress, advanced in science, recognise this, and would wish to battle with the destroyer; but no! non-legislators are fearful lest they should be compelled to defend themselves and put their houses in order. What was good enough for their grandfathers is good enough for them! Heaven help our cult if it is left to them!

And a word to Mr. Green (page 146, 7789). Not the barbarians have used legal restraint as against science, but rather those who with a modicum of knowledge were so narrow-minded and obstinate in their own opinion that they became persecutors. In the good old times, when the title-deed of possession was

> The good and simple plan
> That he should take who had the means,
> And he should keep who can,

an appeal to the stone hatchet soon settled all quarrels; but as men emerged from ferocity their law spread its shelter over the weak, restraint inseparable, marching together with it in unison. We glory in the laws Edward the Confessor collected and compiled, and in the privileges the Barons wrested from John. We, the men of England, made laws for ourselves. Have we particularly among the nations reached the "height of folly"? There are certain things about which law must take concern, and health is one of them: *Salus populi suprema lex*. Surely, therefore, legislation for the producers of one of our sources of food is necessary and advisable!

For ways and means. Are not bee-keepers' associations at the moment philanthropically taxing themselves to do the work of checking this disease and spreading the knowledge of honey-producing? And even supposing that a small tax should be necessary, where is the true bee-keeper who would object to pay his contribution? Probably the hints he would get from the inspector would amply repay the average cottager for whose welfare Mr. Woollard (7797) is so solicitous.—J. Smallwood, Hendon.

[7821.] There are two outstanding positions in reference to foul-brood legislation. First, we want protection against disease generated by bees kept in insanitary conditions; and, secondly, we do not want our bees examined by an inspector when we know they are all right. Then how would it act, should the resolutions of the Council become law, to make it compulsory for all bee-keepers to undergo an oral examination *re* disease by a competent examiner, and if found efficient, and his stocks appear to be healthy, a certificate should be given exempting his hives from *internal* inspection?

I would also suggest that *all* bee-keepers be under a penalty to report the number and state of their hives, by post or otherwise, say every three months. That would check the practice of allowing disease on the quiet, for should a stock of bees be missing, with no satisfactory explanation given, that would be a case to look up.

The inspector should be able to count the hives to verify reports at any time.—T. Newman, Sturminster.

CREOSOTE AS A DISINFECTANT.

[7822.] With regard to the reply to "J. S. W. (Suffolk)" on page 181 of B.B.J. for May 5, would not a mixture of creosote and water, which could be injected by means of a bent syringe, bring about a certain and speedy surrender of the citadel?

I should like to hear of any experience where creosote has been used, together with the strength of the mixture.—W. R., Stoke Rivers.

SWEET CLOVER.

[7823.] My letter on sowing clover on railway embankments (7800, in B.B.J. of April 21) brought me so many applications for the white and yellow sweet clover (*Melilotus alba* and *M. officinalis*) that I had to give only half-quantities to the first-comers and a mere "consolation" pinch to the rest.

I sent particulars to Messrs. Jas. Lee and Son, London, and have heard from them to the effect that they have ordered from Paris a quantity of both seeds.

Of course, they will not be able to sell at the prices I quoted, which were under cost price; but those who were disappointed can now order from this firm.—John W. Moir, Edinburgh.

Echoes from the Hives.

England has suffered a great loss in the death of her King, and I want you to know that I feel it intensely, and that you all have my sympathy. It is a loss not only to your country, but to all nations, for Edward VII. constantly worked to improve the relations between the different Powers. What a misfortune

that his death should have occurred during such a political crisis.—ED. BERTRAND, Nyon, Switzerland.

Perhaps it may be of interest to you to know I had a natural swarm of bees on May 11, the queen of which was a hybrid bought of Mr. Simmins last year. I also had a swarm of natives on Saturday, May 14. Are these the first reported as yet? We are having splendid bee-weather here now. Honey is rolling in from the apple-blossom. My bees are very strong, although several of the stocks are slightly affected with foul brood, for which I have a neighbour to thank. I shall be pleased to see a Foul Brood Bill passed through Parliament. Then, and not until then, we shall be able to get at the slovenly bee-keepers, and there are many of them about whom the experts cannot get into touch with.—E. B., Badsey, Evesham.

I hived a big swarm at The Mount, Southfleet, on Tuesday, the 10th inst., the first I have heard of round here. Season generally very backward, though I have seen some sections nearly finished and drones flying freely.—E. E. S., Southfleet, Kent.

A swarm issued on May 3 at Grapham Vicarage, Surrey. Is not this remarkably early for this year? I have a hive forming queen-cells about two miles away. —A. H. H., Bramley.

Bee-Shows to Come.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B.B.K.A. Prizes arranged in groups of counties for Associations affiliated to the B.B.K.A. Schedules from W. Herrod, Secretary B.B.K.A., 8, Henrietta Street, Covent Garden, London. **Entries close May 31.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs. Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs. B.K.A. Prizes value £30. Entry forms on application to J. H. Hadfield, Hon. Secretary, Alford, Lincs. **Entries close June 10.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

The Coming of Spring (page 148).—If Mr. Smallwood were younger or less seriously inclined than his articles and his expert work certify, one might suspect his fancy of "lightly turning to thoughts of love." Indeed, were the suspicion well grounded, he might be forgiven, for at this time all Nature is pulsing with the rhythmic poetry of life. Death and the end of things seem as far from our thoughts as no doubt they are from the mind of the old bees, who will hardly live to see the casting of the swarm which they and their efforts have made possible.

Wiring Frames (page 148).—The generally-used fine wire certainly cuts into the wood, but it does so most easily immediately after insertion. This is because it attacks a sharp corner, which the awl has formed. During the sinking process this corner merges into an arc, and there comes a point where it ceases to sink under its strain. If, therefore, the wire be sufficiently strained and sunk when wiring, there should be no great trouble on this score. At the same time, this idea of Mr. Wakerell's seems excellent. The eyelet must remove the difficulty, and it should be an easy matter to re-wire a frame when necessary. By the way, it is quite possible to melt the old combs out of the frames, leaving the original wiring intact.

My Brother's Keeper (page 158).—If Mr. Thompson infers that foul brood does not exist because his district is free from it, he may some day have a rude awakening. His district is, I believe, a good one, and this very fact, coupled with the lack of necessity for the importation of bees, greatly accounts for the freedom. But natural freedom from disease ought not to blind us to the fact that others may need the doctor and that the work of the doctor may keep disease away from our own door.

Can Foul Brood be Cured? (page 168).—Even if it were true, as Mr. Woodley seems to suggest, that only by fire can the disease be "cured," that is no argument against curing by compulsion. Rather the reverse, for many bee-keepers are, at present, reluctant to destroy their stocks, whereas if the treatment were general, and recognised as the right and expected thing, they might adopt it more readily. But it is not true that all must be put through the fire at the first sign of disease. Much of value may be saved from the wreck by expert hands, and the process is well enough known to need no quotation.

Destroying Wasps (page 169).—What in the world does Mr. Baker mean by "a better remedy than killing"? Does he intend to capture the wasps and feed them on milk and honey? Or will he try "the gentle art of persuasion"? Or are "the babes" to breathe on them? Perhaps he will be able, with experience, to breed and supply the country with a reformed wasp, which will respect all our little human desires to protect our artificial crops. The sort of wasp, in fact, which was "given to us" when we lived in the Garden of Eden.

WEATHER REPORTS.

WESTBOURNE, SUSSEX.
April, 1910.

Rainfall, 2·41 in.
Above average, ·63 in.
Heaviest fall, 1·10 in. on 6th.
Rain fell on 17 days.
Sunshine, 151·6 hours.
Below average, 37·9 hours.
Brightest day, 27th, 11·6 hours.
Sunless days, 4.
Maximum temperature, 62° on 21st.
Minimum temperature, 26° on 3rd.
Minimum on grass, 22° on 3rd.
Frosty nights, 3.
Mean maximum, 52·1.
Mean minimum, 39·4.
Mean temperature, 45·7.
Below average, ·5.
Maximum barometer, 30·345 on 1st.
Minimum barometer, 29·161 on 13th.

L. B. BIRKETT.

BARNWOOD, GLOUCESTER.
April, 1910.

Rainfall, 2·35 in.
Above average, ·5 in.
Heaviest fall, ·42 in. on 21st.
Rain fell on 19 days.
Total to date, 8·7 in., as compared with 6·21 in. for the corresponding period of last year.
Mean maximum temperature, 53·1; 3·9 below average.
Mean minimum temperature, 38·2; 3·8 below average.
Warmest day, 21st, 63·7.
Coldest night, 2nd, 23·5.
Number of nights with frost in the air, 5; on the ground, 18.
Relative humidity, or percentage of moisture in the air, 78.
Percentage of cloud, 66.
Percentage of wind, 22.

F. H. FOWLER (F.R.Met. Soc.).

APRIL RAINFALL.

Total fall, 2.79 in.
Above average, .32 in.
Heaviest fall in 24 hours, .36 in. on 21st.
Rain fell on 22 days.

W. HEAD, Brilley, Herefordshire.

Notices to Correspondents.

J. H. (Whitley Bay).—*Various Queries.*—1. You can tell fermented honey and syrup by the taste and by the gas bubbles that are formed. 2. No doubt the protracted cold weather has been the cause of your bees dwindling in the skep. 3. The queen is abnormally prolific, and if there are not sufficient bees to cover brood-nest she may deposit more than one egg in a cell. 4. No; honey from diseased colonies should not be used for feeding bees.

BRAMLEY (Bramley).—*Isle of Wight Disease.*—Full particulars about this disease have appeared several times in the B.B.J., and we must refer you to Dr. Malden's report on page 101 of the issue for March 18, 1909; also to Mr. Cowan's address on "Some Recent Investigations in connection with Diseases of Bees" on page 421 of the B.B.J. for October 28, 1909. These two articles will explain all that is known on the subject. As the disease is extremely contagious, it would only tend to its spreading by using combs from hives whose bees had all died. Such combs should certainly be destroyed and the hives thoroughly disinfected before using again.

ELAS (Sale).—*Several Eggs in Cells.*—1. The eggs are probably laid by a fertile worker. Sometimes a queen becomes abnormally prolific and deposits several eggs in a cell. 2. All but one are usually removed. You should examine your colony and make sure that it has a fertile queen.

T. F. N. (Bexley Heath).—*Superseding Queen.*—Yours is evidently a case of superseding, and as your colony is so small and hardly covering two frames, it is evident that the bees are endeavouring to replace a defective or worn-out queen.

J. G. D. (Dulwich Village).—*Name of Wild Bee.*—The bee is *Andrena fulva.*

H. W. (Wakefield).—*Chilled Bees.*—Pouring the syrup between the combs has caused the commotion. When a queen is "balled" she is attacked by workers and hugged to death. It is not surprising to find chilled bees during such weather as we have been having, and many bees leaving the hives are unable to return for this reason. The fact of their recovering in your hand is sufficient evidence of the cause. If bees have not enough stores in the hive, they leave in search of nectar, and in this way become chilled. There is no objection to your having the hives in your window in the way shown in your sketch, but you must provide for reducing the entrance during winter, and especially the spring, when cold winds are so prevalent, and bees require extra protection.

A BEE-KEEPER (Orange River Colony).—*Smoking Bees.*—No doubt smoking bees and stupefying them would stop their work until they had thoroughly recovered, but no sane bee-keeper would do this, as a few puffs of smoke are all that is needed or recommended, and special stress is laid on the fact that "care should be taken not to stupefy the bees by giving too much" ("Guide Book," page 97). Smoking in the ordinary way does not stop the work of the bees at all.

E. B. (Newbury).—*Second Entrance to Super.*—There is no object in having this, and although the plan has frequently been tried, it has been discarded because of the amount of pollen bees store in the supers.

W. W. (Shrewsbury).—*Moving Bees.*—If the bees are packed carefully, with plenty of ventilation provided, you can move them safely in September.

G. A. R. (Lindsay).—*Re-queening.*—As you desire to get as much honey as possible your best plan will be to purchase three young queens from a reliable dealer. The methods you suggest would spoil your chance of a honey-harvest to a certain extent.

Suspected Combs.

W. H. W. (Somerset) and DUXFORD (Cambs).—Comb is affected with foul brood.

R. REES (Pembroke).—There is no disease in comb, the cells being quite empty. Comb which has been bred in is always of a dark colour.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows :—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

VIRGIN GOLDEN ITALIAN QUEENS, vigorous, 2s. each; full-size Extractor, 12s. 6d.; or exchange Honey Press.—DICKINSON, The Homestead, St. Ives, Ringwood. z 91

SALE OR EXCHANGE, Natural Swarms Wanted, 6 new Hives, first-class material, practical workmanship, 3 coats white lead, 10s. 6d. each. Correspondence invited.—McEEY, Yorkplace, Troon, Ayrshire. z 90

WILL EXCHANGE for Bees and Appliances, Good Double Breech-loader, Edison Phonograph, aluminium horn, Guitar and case, Zither and case, Walking-stick Gun, also Traveller's Writing and Stationery Case.—Address, YORK, "British Bee Journal." z 89

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

CHAPMAN HONEY PLANTS FOR SALE, 3d. per score, post free; second-hand Hive, 5s.—STEVENS, Churchill, Oxfordshire. z 86

FINEST LIGHT HONEY, 28 lb. tins, 17s. 6d. Samples 2d.—ABBOTT, Thorpe Bank, Wainfleet. z 87

STANDARD FRAMES HONEY-COMB (selected) to sell, 10s. per dozen.—DAVID HUNTER, Craighead, Abington, N.B. z 88

FOR SALE, Patent Guinea Extractor, only used twice. Take 10s. 6d.—T. LOMAS, Councillor-lane, Cheadle Hulme. z 81

Special Prepaid Advertisements.—*Continued.*

MAN WANTS SITUATION, to look after Bees, Certificated, can make hives, assist gardener; abstainer.—SHORT, Downside Inn, Shepton Mallet. z 77

44TH YEAR.—Fertile Queens, price 5s. each; have for sale about ½ acre Land, close to stream, good district for bee-keeping, within ½ mile Hitchin Great Northern Railway Station.—PRYOR, Breachwood Green. z 78

WANTED, Second-hand Honey Extractor.—Full particulars and price to WILLIAM ROBB, Fifty, Fyvie, Aberdeenshire. z 79

TWO NEW "W.B.C." HIVES, fitted 10 frames, dummy frame, shallow frame crate, painted three coats, all ⅞ in. stuff; also ½ gross Brood Frames, ready to make up, ⅞ in. and ⅞ in. stuff, machine planed and cut, 35s. the lot.—NICHOLSON, 19, Pelham-road, Norwich. z 82

FRAMES (Standard), with metal ends, 7d. per doz., used once, good condition.—42, James-street, Cambridge. z 83

EXCHANGE Bee Appliances and Shallow Combs for good modern Hand Camera.—GEARY, Enderby, Leicestershire. z 83

SELL STOCKS in Frame Hives, or Frames and Bees separate.—HENRY, Smithfield, Egremont, Cumberland. z 85

SWARMS.—Wanted, 20 Natural May Swarms, English Black Bees. State price.—W. BAILEY, Newlands, The Avenue, Watford. z 76

4 GOOD SECONDHAND 21s. EXTRACTORS, will accept 12s. 6d. each, worth much more; also 4 empty Double "Wells" Hives, good condition, 9s. each.—HARRISON, Rosslyn House, Westgate, Pickering. z 68

WHAT OFFERS? 20 Racks Drawn-out Shallow Frames, used once, also 200 Brood Combs, cheap to clear, guaranteed healthy.—SOUTHCOTT, Gittisham, Honiton. z 39

BOOK SWARMS NOW, 2s. 6d. lb., English Bees.—WENT, Riverside, St. Osyth, Colchester. z 43

STRONG TRANSPLANTED TOMATO PLANTS, Up-to-Date, Holmes' Supreme, Laxton's Open Air, 1s. dozen.—GELDER, Sturton, Lincoln. z 61

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed.—J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

SWARMS, third and fourth week in May, 10s. each. Terms, cash with order.—Apply, WM. VOKINS, Arley, near Bewdley, Worcs. z 84

HEALTHY STOCKS, on 5 to 8 frames. Carniolans, 22s.; Italians, 32s.; Americans, 42s.; for immediate delivery. Cash with order.—VOGT, 38, Clementina-road, Leyton. z 92

NOW READY.—Austin and McAslan's complete List of Hives and General Bee Appliances, post free on application.—89, Mitchell-street, Glasgow. z 80

33RD YEAR.—Swarms, Nuclei, Queens as heretofore, imported Italians, 7s.; home raised, 5s. Particulars on application.—E. WOODHAM, Clavering, Newport, Essex. z 60

250 SWARMS WANTED.—E. H. TAYLOR, Welwyn, Herts.

PRIME NATURAL SWARMS, 1909 Queens, from 4 lb. to 7 lb., 3s. lb. till June 15th; 16th till 30th, 2s. 9d. lb.; July, 2s. 6d. lb.; healthy, safe arrival guaranteed, cash with order; empty boxes to be returned.—S. BAILEY, Two Mile Ash, near Horsham (late Itchingfield). z 57

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

CONVERSAZIONE.

(*Concluded from page* 195.)

The Chairman (Mr. Cowan) said that it had been decided to bring the matter before the Council at their next meeting. He did not think it necessary to keep them long, but there were one or two points which he would like to refer to. One was that in Switzerland it was necessary before the inspector was asked to visit an apiary that the bee-keeper should send a specimen of the comb which he thought was diseased to Dr. Burri, of the Bacteriological Institute in Bern, for diagnosis. If, on examination, it showed that foul brood really existed, he was allowed the one franc paid for the examination; if, on the other hand, it was not foul brood, the bee-keeper has to pay the cost himself. This prevents the inspector being called in uselessly, and makes bee-keepers more eager to learn how to diagnose the disease. Bee-keepers do combine much more readily on the Continent than they do in this country. In Switzerland they simply have to say that bee-keepers must pay a compulsory insurance of ½d. per hive, and every member pays that insurance without demurring for a moment. Our system was very different, and it was difficult to get our bee-keepers to combine. Mr. Sander had said that we did not like to be "bossed," but he did not think it was bad to follow the example set by such a Republic as Switzerland, where every man was considered as good as another. There they respect the law, and carry it out without demur, and he thought it was an excellent example which might be followed in this country. With regard to Ireland, the Department of Agriculture had only issued their regulations last June or July, so that they had hardly come into operation, but he believed some of the counties had taken the matter up, and doubtless before long we may hear how the Act is working in that country. Allusion had been made to the voting census. He thought if the opinion of the majority of the bee-keepers could be obtained it would strengthen their hands in bringing the matter before the Board of Agriculture. He had touched on the salient points of the discussion, and would now ask Mr. Crawshaw to reply.

Mr. Avery wished to point out that they were not asking for support for any particular Bill, but simply asking the counties to support the principle of legislation. The Bill would be a matter for discussion afterwards, and the details could be settled by the committee of delegates appointed for the purpose.

Mr. Crawshaw, in reply, said that Mr. Sander had spoken of officialdom, but he would like to say that these dreaded officials were simply experts of the Bee-keepers' Association. They were men used to bees, and, as he had stated, in Swiss legislation the powers of the inspectors were conferred by the Cantons. Mention has been made of one bee-keeper who had been the cause of the destruction of his neighbour's bees. He had a similar unfortunate experience. He had gone into a new district, and took with him none but healthy bees and established a fair-sized apiary. However, on investigation, he found that a man near him had foul brood but did not know it, and he (Mr. Crawshaw) showed it and explained it to him, proceeding to treat the stock in the usual manner. Feeling that it was hitting the bee-keeper rather hard, he explained that there was a lot of good honey in the combs which could be used. He afterwards regretted having explained this, for the result was that his own bees got some of this honey. Allusion had been made to the possibility of the inspectors carrying the disease from place to place. That is provided for by our Swiss friends, whose instructions for disinfection are very thorough. Colonel Walker alluded to skeps and boxes. He had not seen much of either skeps or boxes, and was bound to say that the Swiss had much more up-to-date apiaries. He supposed the inspector could get a skep open if he wanted to, and could destroy or deal with it just as he liked. Mr. Avery spoke about compensation. He was sorry if he had in any way inferred that we should go to the Government for compensation, but he only meant that the Government should give bee-keepers the help they required. Mr. Avery mentioned foul-broody stocks as being valueless. He held a different opinion, and thought that they were worth keeping in spite of the fact that they were infected with foul brood, as he had known instances where it had been got under control. Sometimes it was worth doing to save some of the stock. He found that our Swiss friends were not very much enamoured with American pronouncements, and thought that the American is not so scientific as the Continental bee-keeper.

Mr. Cowan said their thanks were due to Mr. Crawshaw for the interesting paper he had brought before them, and he would like to congratulate him upon it, and to say that he hoped it would not be the last. He therefore with pleasure proposed that he be thanked for the paper, and after that he wished

them to examine some of the novelties and other objects sent for examination.

Mr. Edwards exhibited a nucleus-hive which is arranged to accommodate two half-frame nuclei, one at either end, the frames hanging across the hive, or one half-frame nucleus up to a nine-frame capacity. When the frames are again joined the hive provides hanging capacity, lengthwise, for five frames of standard size. The frame is divided by a simple pull, and is as readily joined together again, no metal work other than the ordinary "W. B. C." ends being employed. In commenting upon this appliance Mr. Crawshaw said he was afraid the frame would be likely to sag when in the hive. Mr. Edwards explained that this was obviated by a staple at the lower portion of end-bar which, by coming in contact with the hive-side, made it quite rigid when in use.

A sample of honey from India was shown by Mr. Eales. The honey was rather thin, though the flavour was fairly good.

An improved model of his device for wiring frames was sent by Mr. J. Holmes, and though this appliance was admitted to be very ingenious, the general opinion was that it would take too much time to wire the foundation in this way.

Mr. Cowan, in closing the meeting, thanked those present for the attention they had given to the discussion, which had been very profitable and instructive.

Colonel Walker moved a vote of thanks to the chairman, which Mr. Avery seconded.

Mr. Cowan, in reply, thanked them, and said it was always a great pleasure for him to be amongst them, but admitted that he was a little bit tired, for he had been in the chair since four o'clock, the session having lasted for nearly six hours.

The meeting of the council and members of the B.B.K.A. and delegates from county associations to discuss the proposed scheme for reorganising the parent Association was held on Wednesday, the 18th inst. A full report of the proceedings will appear in our next issue.

"ROYAL" SHOW AT LIVERPOOL.

The cold weather experienced during the spring and until the last few days has no doubt prevented bee-keepers from making entries for the above show. May we urge upon exhibitors the necessity of keeping up the reputation of the honey department at the leading show of the country? Up to the present very few entries have been received. This should not be so, considering the fact that if it is impossible to send exhibits owing to adverse climatic conditions, the entry fees will be returned upon due notice being given (see schedule).

We have seen supers in the South nearly completed, which is an indication that entries ought to be coming in. Also, our experience is that at Northern shows there is a good market for honey at remunerative prices. Those who have not already done so should apply to the Secretary, B.B.K.A., 23, Bedford Street, Strand, London, W.C., for schedules, and make their entries at once.

NEW B.K.A. FOR SOUTH BEDS.

A meeting was held on Saturday, May 7, at the Franklin Restaurant, Luton, to consider the question of forming a bee-keepers' association for South Beds. Over forty bee-keepers were present from various parts of South Beds, with Mr. W. T. Lye, of Leagrave, in the chair.

The chairman, in the course of his remarks, said how glad he was to be able to do anything to foster bee-keeping amongst cottagers and artisans, to whom it should be of special value as a means of increasing their income, quite apart from the pleasure to be derived from the hobby. He hoped to see a strong association formed in South Beds, which would before long be affiliated with the British Bee-keepers' Association.

Mr. W. Herrod, F.E.S., Secretary to the British Bee-keepers' Association, spoke briefly of the advantages to be derived from the formation of an association in the district, and stated what a good location it was for bee-keeping. An association could do a great deal in the way of combating disease in their district, and the members could give advice and help to beginners with whom they came in contact at the meetings.

It was hoped, as soon as the association was in a position to do so, to purchase appliances for the use of the members, and perhaps later on to procure the services of an expert.

The chairman proposed, and Mr. W. Stanley seconded, that the association be formed, and this was carried unanimously.

Mr. R. M. Brown, proposed by Mr. T. D. Sinfield and seconded by Mr. W. Herrod, was elected hon. secretary and treasurer.

The committee was elected as follows: Mrs. Herrod, Mrs. W. Hartop, Messrs. W. Herrod, Stewart, Cripps, Apthorpe, A. D. Sinfield, Fensome, Hutchins, Folds, W. Stanley, T. D. Sinfield, Burgess, F. Deveraux, and H. J. Sell. Mr. F. Crawley, of Stockwood, was mentioned as a possible president, and

Mr. W. T. Lye and Mr. C. Dillingham were elected as vice-presidents.

Bee-keepers wishing to join the association are requested to communicate with the hon. sec., Mr. R. M. Brown, 42, Ashburnham Road, Luton.

STAFFORDSHIRE B.K.A.

ANNUAL MEETING.

Mr. A. H. Heath, M.P., President, occupied the chair at the annual meeting of the Staffordshire Bee-keepers' Association, which was held on April 16 in the County Education Buildings, Stafford.

The annual report, which was presented by the Hon. Secretary, the Rev. G. C. Bruton, stated that the past year had not proved satisfactory, for neither in the number of subscribers nor in the amount of subscriptions did the year compare favourably with previous years. The number of subscribers was 150, and their subscriptions amounted to £27 11s. 6d. The year began with a balance in hand of £17 15s. 2d., but at the close it had been reduced to £3 4s. 7d. The total income was £48 3s. 11d. A loss of £15 16s. 4d. was sustained on the County Show at Tamworth, and there was a loss of £4 5s. 6d. on the show at Stafford. The expert had visited 146 apiaries, and had inspected 851 stocks, of which only sixteen were in straw skeps, and there were thirteen colonies in which foul brood was found to exist. The report was adopted.

Mr. J. Kendrick said the Committee had had under consideration a proposal that county associations should become branches of the British Bee-keepers' Association, but they did not approve of the scheme, and on their behalf he moved that the scheme be not adopted.

The motion was seconded by the Rev. G. C. Bruton, and eventually was carried.

The Rev. A. R. Alsop moved that the association approve of a measure being introduced into Parliament for the purpose of enabling the authorities to combat foul brood in bees, it being a very contagious disease.

Mr. Tinsley seconded the motion, which was carried.

Mr. A. H. Heath, M.P., was re-elected President, the Rev. A. R. Alsop Vice-President, the Rev. G. C. Bruton Hon. Secretary, and Mr. W. Hay Auditor. The Committee was also re-elected.

Mr. G. A. Lloyd, M.P., in moving a vote of thanks to the Chairman, said he was not sure on broad lines that he should be quite ready to agree with the proposed scheme of legislation. He would rather reserve his judgment until he knew more about it, but he had been a Government official, and he had a horror of allowing any independent body to get into the hands of a Government Department. He thought that such associations as theirs did best when acting on independent lines, and if it were found possible to promote the interests of bee-keepers' associations so that they might get sufficient success to obtain the funds with which to pay compensation, he thought it would be better than asking the State to do it. On the whole, he thought that they worked better and got more success locally than they would if they relied upon the State to provide compensation as suggested.—(*Communicated.*)

NORTHUMBERLAND AND DURHAM B.K.A.

ANNUAL MEETING.

The annual meeting of this association was held in Crosby's Café, Newcastle-on-Tyne, on April 16, Dr. W. E. Moore-Ede in the chair.

The balance-sheet for the year ending December 31, 1909, showed a balance in hand of £11 15s.

The following officers were elected:—President, Lord Barnard; Vice-Presidents, Lord Northbourne, H. F. Bulman, Esq., Mrs. H. G. Stobart, and Dr. W. E. Moore-Ede; Hon. Secretary, G. G. Robson, Oakleigh, Butterknowle, S.O., co. Durham; Hon. Treasurer, J. W. Wakinshaw: representatives for Council of B.B.K.A., Captain Sitwell and Mr. J. N. Kidd.

Captain Sitwell was present, and the views of this association with reference to the reconstitution of the B.B.K.A. were placed before him, and he was asked to convey them to the Council.

A resolution was unanimously passed advocating suitable legislation for the prevention of the spread of bee-diseases and their eradication.

On the kind invitation of Mrs. H. G. Stobart, the association decided to hold its first excursion this year to Witton Tower, Witton-le-Wear.

It was decided to hold the annual honey show in Newcastle next October.

After the business of the meeting had concluded, a discussion took place as to the cause of the honey-dew in the heather sections last season. Many of the members were of the opinion that the cold July caused cessation of breeding, and that the brood-nest became choked with the honey-dew gathered during the strong "flow" of the secretion at the end of that month, and that the very hot weather for a few days immediately following the transference of the hives to the moors caused the queen to re-start laying prolifically, with the result that the honey-dew was carried up into the empty combs in the sections. On the other hand, bee-keepers of thirty years' standing maintained that they had never known clover honey

carried into supers at the moors, and that the honey-dew found mixed with the heather honey—and which rendered the majority of the sections unsaleable—was gathered from the oak-trees within flying distance of the stands at the moors.—G. F. ROBSON, Hon. Sec.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES AND QUERIES.

GLASS QUILTS

[7824.] I trust you will find room for the following rambling notes and queries. I have successfully wintered four stocks —two Italian and two British. I use glass quilts; this is my third season's experience with them, and, though I find great advantages in their use, I have discovered no serious drawbacks. I have them made to my own design: a sheet of 21-oz. glass with a circular feed-hole, 3 in. in diameter, in the centre, covered with a 4-in. square of glass; the whole in a frame 1 in. wide by ½ in. deep, leaving approximately ⅛ in. below the glass. I tack felt, $\frac{3}{16}$ in. thick, on the lower side all round. This rests on the sides of the brood-chamber, and allows for slow but fairly complete ventilation, with a bee-space of about ¼ in. over the frames. The glass quilt I cover with four thicknesses of $\frac{3}{16}$ in. felt, and in winter a cushion filled with woollen rags over all. At any time, and almost at any temperature, I can remove the felt quilts and glance at the condition of the bees, and gain a pretty fair idea of the quantity of stores, without disturbing the cluster in the least. In spring and autumn I slide off the centre glass, and put on either a slow or rapid feeder, as the case requires. In winter, and, indeed, throughout the year, there is little or no condensation on the glass; such as there is is mostly at the extreme edges of the quilt. The bees occasionally build brace-comb between the tops of the frames and the glass, but this is never a serious matter. Frankly, I know of no other disadvantages.

Why are glass quilts not more used? What are the drawbacks outweighing their manifest advantages? Or is it the innate, ineradicable conservatism of the Briton which prevents him adopting them? After all, which is the nearer to Nature—the combs covered with unbleached calico and carpets, and sacking, and a bag of chaff, or a solid and more or less impervious material? The combs in a hollow tree are hung from the top of the hollow, the mass above being solid wood. I should really like to know whether those of your readers who have ever tried glass quilts have found it necessary to discard them, and to learn why.

By means of the glass quilt I discovered that a nucleus I had on four frames had died early in January through cold, and that a strong colony had perished through dysentery. This last loss puzzles me. All the stocks were fed up with the same syrup in the autumn, and yet this particular colony was the only one to be attacked.

None of my colonies are as far advanced now as they were at the same time last year. I think the cold weather this spring has something to do with this. I see by my note-book that one hive had eight frames full of brood on both sides on April 25 last year, and swarmed on May 22. This year it has only three frames (both sides) of brood. My strongest hive has only five frames (both sides). I have fed them exactly as I did last year.

The "Guide Book" mentions the *Amelanchier canadensis* as a good spring forage plant. I planted two in close proximity to the hives three years ago, and though last year and this they bloomed abundantly, I never saw a bee on them either year.

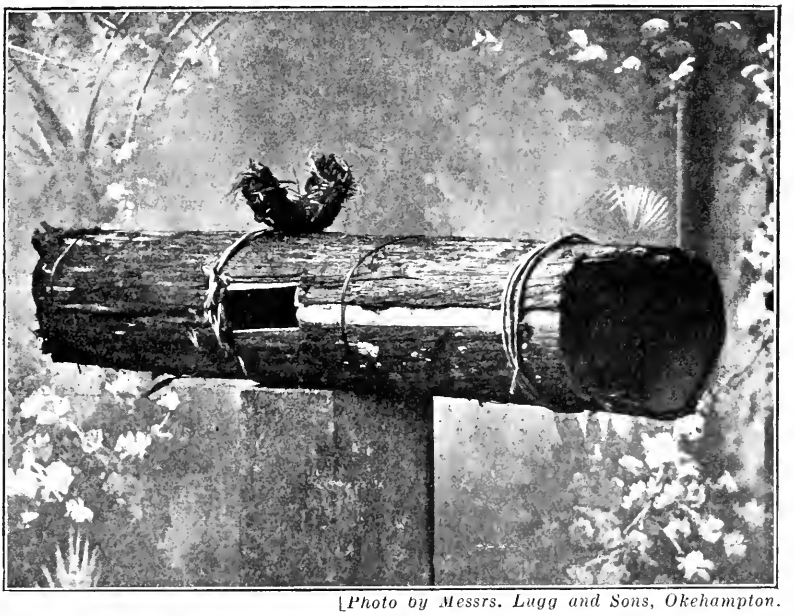
I had a curious experience of queen-"balling" a week or so ago. I opened one of my hives after smoking it, and when I came to the middle frame I saw a knot of bees about the size of half a walnut on one side. Thinking it might be a case of "balling," I touched the knot gently with my finger, and shifted the bees somewhat. The queen was right in the centre, and fell off on to the ground. I hurriedly put back the frame and picked up the queen, which walked on to my finger, and let her slip on to the end frame and run down. I covered all up, and have not ventured to open the hive since. I think she is all right, and laying, judging from the pollen being carried into the hive.

Last year, by this date, I had caught at least fifteen queen-wasps in bottles of sweetened beer hung on the fruit-trees. This year I have neither killed nor even seen one.

There is a strange-looking bee I have noticed the last two seasons in the garden, about one-third larger than the hive-bee, but much the same shape, jet-black head and legs, and both thorax and abdomen of a solid, deep, rich reddish-

orange. A sort of *Bombus*, I suppose; but I cannot ascertain its name, and should like to learn that and its habits.—DULWICH.

[Glass covers for frames have been frequently mentioned in our pages, and their use warmly advocated by some successful bee-keepers. The great objections to them are the expense and a habit the bees have of propolising them firmly down. When being removed they are liable to break. We have seen the tree you mention covered with bees. It is just possible there are not sufficient blossoms to induce the bees to leave better pasturage. If you will send a specimen of the bee you mention we will endeavour to name it.—ED.]



[*Photo by Messrs. Lugg and Sons, Okehampton.*

AN EAST AFRICAN BEE-HIVE.

EAST AFRICAN BEE-HIVE.

[7825.] I have pleasure in sending you a photo of a curious and interesting hive which my son brought me from British East Africa, as you may care to have it and account of the natives for the B.B.J. —(MRS.) E. A. BIRCH, Devon.

"This is the type of bee-hive in use among the Wanderobbo natives in British East Africa. The Wanderobbos are a wild tribe of elephant-hunters, who live entirely by the chase, and who set much store by honey. The hive which the photograph depicts is made as follows: A tree of about 12 in. diameter is cut down, barked and split up into two longitudinal sections, the total length of the tree-trunk shown in picture being some 5 ft. The wood inside of each longitudinal section is dug out, so that when the sections are fitted together they form a hollow cylinder. In the bottom section a hole 6 in. by 4 in. is cut. The sections are put together and bound by withies, the only holes left after the hive thus roughly fashioned has been made being a small orifice at the end for the entry and exit of the bees and the hole first mentioned in the bottom section, which is closed by a bundle of hemp until such time as the natives wish to rob the hive, when they get at the honey by putting their arms through this hole.

"After the sections have been placed together, and before they are bound by the withies, they are rebarked. When completed the hive is placed in a tree. The bark projections to give protection to the bees from the sun are to be noticed at each end."

BEE-KEEPING IN CANADA.

[7826.] I was sorry to read the letter (page 105) signed "E. A., Victoria, B.C.," written to your paper and copied by the editor of the *Canadian Bee Journal* here, as it contains statements that are either untrue, misleading, or exaggerated. Might I suggest to "E. A." that abuse of a country in which one is making a living is exactly on a par with abuse of a man whose hospitality you are accepting? As an Englishman resident in Canada for seventeen years, perhaps I may be allowed to comment on parts of the letter. There is a grain of truth in

the statement that very few good houses are to be seen on the transcontinental trip. I have made the journey twice each way, and I have often wondered why this should be. Every settlement has good houses to show, but one does not see them from the line, and when your correspondent has travelled about a little more he will know better. "E. A." also gives a list of different kinds of work he has tried in nine months, and says this shows the uncertainty of labour. It does not; it merely shows that he cannot hold his job. I have just returned from a trip to B.C., and while there made many inquiries as to the labour market. From early spring till late autumn there is more work than there are men to do it, and even in the comparatively short winter work can usually be obtained, though at a lower wage. As a general rule, wages are very high there. I do not believe there is any part of Canada where an efficient man cannot draw good wages practically all the year round.

Again, "E. A." draws a harrowing picture of a huge country in the hands of land companies. This is arrant nonsense. British Columbia is a large country, but an immense amount of its acreage is waste land—mountain, rock, &c.—and a great deal of valuable land is at present useless because there are no means of transport. This land may be had very cheaply, and a man who does not mind roughing it and waiting till the country can afford to build roads would make a good thing of it. Agricultural land with good transport facilities is very scarce, and the price is certainly not too low; but the statement that no land in the province is open for homesteads is untrue. Before leaving this subject I should like to point out that the ill-feeling between Canadians and Englishmen is largely caused by exactly such letters as "E. A.'s." Canadians are justifiably proud of their country, and when a man, on the strength of a few months' acquaintance with it, proceeds to denounce it and its ways, they naturally resent it, and say so. Many Englishmen do not care for the country at first, because its ways are strange to them, but after a few years they get to like it.

I have been keeping bees in this part for twelve years, and for the last six have made bee-keeping my main line. I keep about a hundred colonies. On the whole, it is a good business here, but I am thinking of moving to British Columbia, to escape the long, cold winters. Perhaps I may be permitted to give my advice to intending emigrants, as it differs materially from "E. A.'s." A man who is physically strong and likes outdoor work cannot do better than come to Canada. If he has no capital, I fancy he is likely to be more successful on the prairie than in British Columbia. If he has a little capital, and is anxious to take up bee-keeping and fruit-growing in B.C., he should select a settlement he likes and get work there for a year. By that time he will know all the land in the neighbourhood that is for sale, and will be able to save money by dealing with the owner direct. A man who does this is not likely to write to the English papers about the iniquities of the land system.—WM. L. COUPER, Moose Mountain Apiary, Sask., Canada.

PROPOSED B.K.A. FOR ABERDEENSHIRE.

[7827.] I should like to make an earnest appeal to all bee-keepers in the county to join the association which is about to be inaugurated. A meeting will be held in one of the college rooms in Aberdeen on Saturday, June 4, at 2 p.m., when I hope every bee-keeper who can possibly be present will attend and aid in the good cause. Meanwhile, let me urge all who approve of the movement, whether able to be present or not, to forward name and address, at as early a date as possible, to Mr. Alec Low, Swailand, Newmachar. To secure success it only remains for every earnest apiarist to give a long pull, a strong pull, and a pull all together, and so bring the movement to full fruition.—D. M. MACDONALD, Banff.

STARTING BEE-KEEPING IN THE WEST INDIES.

[7828.] Have you any recollection of having heard, I wonder, during your long experience among bee-keepers, anything approaching what actually happened to me and, incidentally, the bees? Perhaps it would be as well to state that, selecting Maeterlinck's "Life of the Bee," more on account of the fame of the author than of any interest in bees, I read it with avidity, at two sittings; then suddenly went mad. No other word so accurately describes my excited condition. Probably you know the symptoms. Beyond chasing the familiar English black bee, cap in hand, with the object of covering it in the act of gathering honey, and then "pulling its sting out," I had never noticed bees. This may explain, then, why I nailed a condensed-milk box, minus the lid, against the lower half of the window of my quarters, vainly imagining that by so doing I had solved at once the difficulty of securing an observatory-hive. That same afternoon I despatched a little black boy to the country, with instructions to discover an apiary and purchase some bees. He returned late in the evening with a frame of Italian bees in a box, and bewildering instructions, which

in the heat of my devouring enthusiasm I ignored. Paddy Flynn, an untamed Irishman, averred that he had seen bees "smoked" in the "counthry," and volunteered his services. Maybe he had seen bees "smoked," but not, I now in my wisdom feel sure, in the manner we adopted. We gingerly rested the box on the edges of two chairs; then, at Paddy's suggestion, we each lit one of my choicest cigars, filled our mouths with smoke, and puffed it in at any gaping seam we could put our lips to. On perceiving the clouds of smoke the bees emulated the blackbirds in the king's pie, by beginning to sing, and that, to a novice, most alarmingly. This Paddy opined was due to our not injecting sufficient smoke; so we collected some green weeds, placed them on top of some paper beneath the box of bees, then fired the paper. Not only the bees, but we also, were quite overcome with the volumes of smoke that issued forth, and we had to sweep the whole reeking mass of rubbish out of doors. Paddy at this stage retired. Enveloping myself in a mosquito curtain, and protecting my hands with a pair of thick service "mitts," I prised off the lid, and saw for the first time in my life an Italian bee. To my dismay I discovered that the frame would not fit my previously arranged milk box, so I fastened the box in which the bees had been sent to me against the window. How I moved them to a box with glass sides standing on a table inside my quarters, thence outside to a hive contrived from a kerosene box fitted with rough frames, and again transferred them to a regulation hive, would but weary you in the recital. But I marvel now that the idea of buying a book on the subject never once occurred to me. I also collected and (none too successfully) hived a swarm of bees, and now challenge a theory I have seen in some treatise on the subject, that during this period of their lives one may safely handle them without counting the danger of being stung. The result of my innocent faith in this theory was that my right arm assumed such dimensions that for three days I could not don a coat. With good wishes to all in the craft.—R. SPENCER (Staff-Sgt., R.A.M.C.), Military Hospital, Jamaica, W.I.

BEES IN THE SOUTH OF SPAIN.

[7829.] Mr. W. G. Coates (page 197) should really be more careful when he speaks of humble-bees, and includes under that head *Osmia*, *Melecta punctata*, and *Podalirius nigrocincta*. All these are solitary bees, building no nest, but simply laying three or four eggs on a store of pollen, then leaving the new generation to its own devices. *Melecta* does not even make its own store, but lays its egg in that of some other bee. The humble-bees are, like *Apis mellifica*, social insects with queen and workers. They all belong to the genus Bombus, and there is no excuse for bringing into their company such individualistic rabble as *Osmia* and *Podalirius*.—G. G. DESMOND, London, S.E.

SWARMING EXPERIENCES.

[7830.] An experience I have had with a swarm purchased the last week in May, 1909, may prove of some interest to brother bee-keepers.

The stock increased so rapidly that during July, finding queen-cells formed, I cut them all out, and supered, following instructions given in B.B.J. For a time the bees worked in the supers, but during the last few days of the month they threw off a big swarm.

The swarm wintered well, and, being very strong, I supered it on May 1, but on the 13th (a very windy and cold day) a swarm came off, settling on a golden elder-tree. I have always understood that bees have a dislike to the elder, so it seems remarkable that they should have chosen this tree when there are numerous fruit-trees in the immediate vicinity.

I am only a beginner, and have managed to get through the winter without losing a single stock, though I hived a swarm as late as August 1 last season.—R. STARR, Cambridge.

[The swarm on May 13 was probably a "hunger" swarm.—ED.]

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Absorbents.—Mr. Byer, in *Canadian Bee Journal*, writing on the subject of sealed covers *versus* absorbents over the bees for winter packing, concludes: "We can winter with sealed covers, but as we winter the bees so much better with the other style of packing, we deem it unwise to leave the plan that gives the best results." Wintering in Canada should be a pretty fair test of the value of any system, so we may stick safely to our present plan of winter packing as the one all over giving best results.

Co-operative Experiments.—Acting on the initiative of Director Pettit, of the Agricultural College, Guelph, Ontario, Canadian bee-keepers are systematically to experiment on the question of swarming during the current year. A circular containing instructions has been sent out to bee-keepers, and the facts from all over the province are to be collected and collated at the end of the season. Undoubtedly the idea is an excellent one, and should bear good fruit.

Honey-dew in Australia.—Mr. Beuhne, in *Bee-keeper*, says: "There are probably as many honey-secreting insects in Australia as anywhere, and quite a quantity was gathered last year. The so-called manna is an insect production, but honey-dew does not make itself so evident here, because our honeys are naturally darker than American or European." Mr. Beuhne looks on it as a *secretion*.

Obituary.—Mr. Edwin Tipper, editor and proprietor of the Australian *Bee Bulletin*, died on March 1, aged seventy-six, after a prolonged illness. The *Bulletin* has just completed its eighteenth year, and is now edited by Mr. William Abram, a prominent apiarist.

A New Idea.—An Australian bee-keeper introduces his queens in a large cage covering a considerable comb-surface, where she can sip honey to her heart's content; but no bees can get near her, nor does he allow them to liberate her. Two days after introducing her he pierces a hole with a lead-pencil, from the *other* side of the comb right to the centre of the cage, and allows her to walk out by this backdoor exit. I wonder if there is anything of value in the idea.

Section Honey.—"What is more strikingly artistic, sublimely beautiful, and exquisitely delicious than a section of white comb honey in its virgin purity, fresh from Nature's laboratory and bearing her seal, which is a sure guarantee of purity, uncontaminated by contact with the many open vessels through which extracted honey must pass ere it reaches the consumer's table. Show me the bee-keeper who would stand before an enlightened audience and say that extracted honey can take the place of comb honey." The exquisite beauty of appearance, construction, and appetising lusciousness, sung as above in the *Review*, seems a bitter pill to its editor, who for years has almost entirely neglected this branch of apiculture—so much so that his readers have taken to grumbling that comb honey is left out in the cold.

Against Deeper Frames.—The latest experiences, says *Gleanings*, show that if there is to be any reduction in the size of hive-bodies or brood-chambers, it should be along *vertical* rather than lateral lines; hence we see a strong tendency growing more and more towards the ten-frame hives, shallower than the "Langstroth," but otherwise of the same dimensions. This is a doctrine I have been preaching for years. Our own standard, with shallow frames for extracting, is about the ideal size.

An Ideal to Work For.—The officials of the National Bee-keepers' Association are making an earnest effort to work up the membership to 5,000 before the end of the year. The aim, I think, is a modest one. Counting county members, the British totals fully 7,000; but if combined effort takes the place of the haphazard union at present existing, the membership could easily be increased to 10,000 before the end of the year. Why not? The German Bee-keepers' Association now numbers over 100,000 members. Continental nations put us to the blush when we compare our associated effort with theirs. Even gallant little Switzerland can boast of a membership of 7,200 in its B.K.A. Britons, arise, and at least double that total!

Justice at Last.—For years I have fought strenuously against the aspersions cast upon black bees and the no less one-sided laudation of Italians. The Italian is an excellent bee, but it is not the *best* —at least, in all circumstances, in all localities, and in all countries. At last justice is slowly working towards a fairer view of the subject. In *American Bee Journal* Dr. Phillips confesses: "Italians are little, if any, less immune to American foul brood than other bees." The editor, a great stickler in the past for the pre-eminence of Italians, agrees that over a great part of Europe "immunity belongs to the blacks rather than to the Italians." And he adds: "Perhaps we may find that the most vigorous bees are the most resistant to disease, whether they be blacks or Italians."

A Honey Booklet.—The Michigan Bee-keepers' Association are this year printing off 1,500 copies of a small book giving the names and addresses of members having honey for sale. "This book has been a big help to the members in selling their honey. Last year it was sent all over the States, and the great cry at the convention was that the members could not supply the demands for honey, and some of them gave the entire credit to the booklet." A rather good idea, this, in these days of advertising.

Gentle Hornets.—Mr. Allan Lathom puts in a plea for the hornets. They are in many ways a blessing instead of a bane. "They never resent gentle motions," he says, "and pay no more attention to a man than to a tree, if the man knows his business."

Echoes from the Hives.

I examined my small apiary of eight hives to-day, May 15 (season very backward); all have wintered well on natural stores, and with young queens. I consider this fairly good, considering that they are situated at an altitude of nearly 1,000 ft. above sea-level. With best wishes for all bee-keepers for a successful season.—J. Watson Egglestone, Consett, Durham.

Bee-Shows to Come.

June 7 to 10, at Winchester.—Honey and Hive Exhibition, under the direction of Hants and Isle of Wight B.K.A., in connection with the Royal Counties Agricultural Show. Schedules from E. H. Bellairs, Hon. Sec., Bransgore, Christchurch, Hants.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B.B.K.A. Prizes arranged in groups of counties for Associations affiliated to the B.B.K.A. Schedules from W. Herrod, Secretary B.B.K.A., 23, Bedford Street, Strand, London, W.C. **Entries close May 31.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A. Prizes value £30. Entry forms on application to J. H. Hadfield, Hon. Secretary, Alford, Lincs. **Entries close June 10.**

July 21, at Southwell.—Annual Show of the Notts. B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

Notices to Correspondents.

D. H. D. (Aberdare).—*Ants in Hives.*—Use the iron shoe shown on page 168 of "Guide Book." One is fixed on each leg, and the cup, when filled with paraffin or other oil, will effectually prevent ants from entering hives.

J. H. (Haywards Heath).—*Comb-foundation for Supers.*—1. For shallow extracting frames drone-base foundation is usually employed. 2. Supers should be put on when the bees are ready for them. You can ascertain this by noticing if new wax is being added to the cells along the top. 3. When the super is nearly filled place an empty one beneath it.

Forester (Lyndhurst).—*Bee-keeping in Australia.*—1. You do not say what part of Australia you wish to go to, but each State has an Agent-General in London who would give you the information you desire. 2. There are two bee-papers—the *Australian Bee Bulletin*, published by E. Tipper, West Maitland, N.S.W., and the *Australasian Bee-keeper*, published by Pender Brothers, also at West Maitland, N.S.W. 3. A third-class certificate would not be much use to you, but if you were able to obtain a first-class certificate it might assist you in getting employment.

A. D. (Tarbolton).—*Dysentery.*—1. Your colony has succumbed to dysentery of a virulent type. 2. After destroying combs thoroughly disinfect hives by scrubbing with boiling water, soda, and soap, and paint over with a solution of carbolic acid or burn out with a painter's lamp.

Supers (London).—*Preventing Swarming.*—1. The description of dealing with a swarm to which you refer appeared in an article by Colonel Walker (page 224) in B.B.J. of June 10, 1909. 2. Putting on a second tier of supers above first makes very little difference, although the bees do not take to second super so readily.

D. J. C. (King's Lynn).—*Cleaning Used Combs.*—Soak the combs in water, afterwards syringing them well with a garden syringe.

H. A. V. (Rye).—*Old Comb-foundation.*—Warm the foundation at the fire, and it will be restored to its original appearance and plasticity. The bees will not refuse to work it.

G. E. Desmond (London).—*Limnanthes Douglasii.*—There is no local name for this plant; it is usually abbreviated to limnanthes.

Suspected Combs.

J. (Closeburn).—The comb is affected with foul brood.

Hill Farm (Essex).—Foul brood, in an advanced stage of the disease, is the cause of your stock dying.

Wondering (Leeds).—The comb shows that the stock is suffering from black brood. The treatment is similar to that used in cases of foul brood, as it is equally contagious.

H. W. (Wakefield).—Comb contains hard pollen only. There are traces of wax-moth on one end. The "Guide Book" gives instructions for dealing with bees in these circumstances.

J. L. (Surrey).—A bad case of foul brood.

E. C. S. (Yorks).—Comb is affected with foul brood in incipient stage, and there is evidently a fertile worker present in the hive.

Special Prepaid Advertisements.—*Continued.*

½-DOZEN FERTILE QUEENS FOR SALE, 3s. 6d. each.—HILLMAN, Stonehouse, Glos. z 95

FOR SALE, two nearly new Hives, "W.B.C." —MISS SEACOME, Thornton Hough, near Chester. a 9

2 1909 QUEENS, 3s. 6d. each. — WILSON, 30, Burry-road, St. Leonards. a 23

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

OFFER WANTED FOR NATURAL SWARMS, 6 dozen Drawn-out Shallow Frames, used last season.—BUXTON, East Bergholt, Suffolk. a 22

WANTED, "Cowan" Extractor, in good condition.—EDWARD G. GILBERT, Coventry-road, Hinckley. a 21

"DOOLITTLE" STRAIN QUEENS.—I am booking orders for the above. Virgins, 1s. 6d.; Fertiles, 5s.; delivery early in June.—D. G. TAYLOR, Ilminster. a 20

FOR SALE, 5 Crates Sections, with Foundation and Separators.—Particulars, GILBERTSON, 43, High Annan, Dumfriesshire. a 19

PRIME NATURAL SWARMS, 15s. each; Swarm Boxes, 2s. 6d. each, returnable; dispatched on day of issue. — GEORGE BELL, Shoreham, Sevenoaks. a 17

WANTED, 3 Swarms. Exchange chickens, garden or joiner's tools, or send lowest offers.—WARD, Gould's Grove, Wallingford. a 15

LARGE NUMBER EMPTY BEE-HIVES, and other appliances, at third cost price.—B. PARSONS, Manor View, Rusthall, Tunbridge Wells. a 13

HAMBROOK'S BEES ALL SOLD COMPLETELY. a 12

"W.B.C." AND COTTAGERS' HIVES, Standard size, for sale, perfect condition, 3 coats paint, racks shallow frames, combs drawn out.—HILL, Ashley, Stockbridge, Hants. a 11

FOR SALE, Natural Swarms, from 10 and 12 Bar Frame Hives, expected as soon as weather permits, 12s. and 15s. each.—MITCHELL, Vine Cottage, Teignmouth-road, Torquay. a 8

STRONG NATURAL SWARMS ENGLISH BEES END OF MAY, 12s. 6d. and 15s. each. —NORTH, Cressing, Braintree, Essex. a 7

2 HEALTHY STOCKS, in Standard Hives, also 1 empty Hive, 4 Section Crates, 2 Excluders, 4 Feeders, pair "Burkitt" Gloves, the lot £3 15s.—H. NELMES, Cathcart. a 6

EXCHANGE NEW "W.B.C." HIVE FOR HEALTHY SWARM.—Particulars, T. A., Leire, Lutterworth. a 4

WANTED, Bees, Stocks, or Swarms. Exchange English Concertina, as new. Approval.—WILLIAMS, Bee-keeper, St. Briavels, Glos. a 3

2 STRONG NATURAL SWARMS, on 5 wired Frames, packed, 15s. 6d. each; several strong Stocks, in good Hives, with racks of Shallow Frames on, 21s. each.—MULLEY, Bighton, Alresford. a 2

HEALTHY JUNE SWARMS, 11s. each, on 10 Frames, 15s.—COOK, Worlington, Soham. z 99

HEALTHY SWARMS, 14s. each, best strain, guaranteed safe arrival; inspection invited Wednesday afternoons.—P. HANSEN, Gardener and Bee Expert, 3, Gladstone-cottages, Norwood Green, Southall. z 98

Special Prepaid Advertisements.—*Continued.*

FOR SALE, good healthy Swarms, 8s. each, or 2s. 3d. lb. Cash with order.—R. WHITTING, Manea, March. a 1

WILL EXCHANGE FOR STRONG STOCKS OF BEES, or sell lot 5 guineas, 60-egg incubator, splendid hatcher, by Phipps, foster-mother same maker, and very strong cool-brooder, all new last year.—HARRIS, Bushwood, Henley-in-Arden. z 94

SALE OR EXCHANGE, Natural Swarms Wanted, 6 new Hives, first-class material, practical workmanship, 3 coats white lead, 10s. 6d. each. Correspondence invited. — McEEY, Yorkplace, Troon, Ayrshire. z 90

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

SELL STOCKS in Frame Hives, or Frames and Bees separate.—HENRY, Smithfield, Egremont, Cumberland. z 85

WHAT OFFERS? 20 Racks Drawn-out Shallow Frames, used once, also 200 Brood Combs, cheap to clear, guaranteed healthy.—SOUTHCOTT, Gittisham, Honiton. z 39

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

PRIME NATURAL SWARMS, English, guaranteed healthy, May till June 15th, 3s. lb; June 16th and July, 2s. 6d. lb. Cash with order, or deposit. Boxes to be returned, or charged 1s. —P. PESKETT, Post Office, Barnsgreen, Horsham. a 16

4 STRONG 1907 STOCKS, in Hives, and Crate of Sections, 25s. each, carriage paid; also booking Swarms, May 15s. each, June 12s. 6d.—G. A. GILLETT, Bee-keeper, Moreton-in-Marsh, Gloucestershire. a 14

EXCHANGE 150 NON-MOISTURE INCUBATOR, scarcely used, for "W.B.C." Hives, Stocks, Appliances; guarantee required.—Address, WOOD, Clovelly, Wyre Hill, Bewdley. a 10

NATURAL SWARMS, with young Queens, for delivery before June 21st, 2s. 6d. lb.; afterwards, 2s.—MASON, Moorend, Yardley Gobion, Stony Stratford. z 96

STRONG NATURAL SWARMS, guaranteed healthy, 12s. 6d., packed, safe delivery.—CADMAN, Codsall Wood. z 97

STOCKS OF BEES, in prime condition, on 8 combs, £1 5s.; Virgin Queens, English Black, in introducing cage, 1s. 6d. For sale, cash with order.—T. D. SINFIELD, 26, Upper George-street, Luton. a 18

NOW READY.—Austin and McAslan's complete List of Hives and General Bee Appliances, post free on application.—89, Mitchell-street, Glasgow. z 80

250 SWARMS WANTED.—E. H. TAYLOR, Welwyn, Herts.

ITALIAN QUEENS DIRECT FROM ITALY.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," May 5.

QUEENS, Fertile.—Brice's reliable strain, in speciality introducing cage, 5s. 6d.—BRICE'S APIARIES, Otford, Kent. z 66

Editorial, Notices, &c.

PROPOSED B.K.A. FOR ABERDEENSHIRE.

We are pleased to see that there is a move to start an association in Aberdeenshire, and an inaugural meeting is to be held for the purpose in one of the rooms at the Marischal College in Aberdeen on Saturday, June 4, at 2 p.m. The effort to organise is a timely one, for without it the industry can never attain the position it should by right occupy. Bee-keepers who wish to make their own views widely prevail may learn a lesson from political workers. Their watchword is "Organise, organise, organise." The loss of most elections on one side or the other is put down to the want of organisation, and most victories are hailed as evidence of what can be done by organisation. So far as truth lies in these assertions, all it amounts to is that to push a cause you must have plenty of people interested in the cause—interested so as to work for it—working for it systematically. The first point is to secure numbers to show an interest in the subject of apiculture. Happily now there are thousands of bee-keepers who manage their bees intelligently, but how few of them belong to any association. Large numbers do not think it worth while to join an association, because they feel doubtful as to how far they will derive advantage from membership. Distance from headquarters, inconvenience of getting to meetings, and the uninteresting nature of the business may all combine to prevent people from joining the larger associations; but if only four or five neighbouring bee-keepers will combine to talk with each other about their methods, their difficulties, and their successes, a great stimulus will be given both to the pursuit of bee-keeping and to united efforts to improve the industry. Such a small branch affiliated to the county association adds strength to the parent body, while each of the remoter and district members will feel possessed of a share in the county society and its doings.

We heartily commend the effort being now made in Aberdeenshire, and, wishing it every success, we urge all interested in bee-keeping in the county to send their names to Mr. Alec Low, Swailend, Newmachar, and arrange to attend the meeting.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Wednesday, May 18, at 11, Chandos Street, Cavendish Square, when Mr. T. W. Cowan presided. There were also present Miss Gayton, Messrs. W. F. Reid, T. Bevan, C. L. M. Eales, J. B. Lamb, A. G. Pugh, E. Garcke, J. Grimwood, O. R. Frankenstein, Dr. Elliot, Capt. Sitwell, Col. H. F. Jolly, and S. Jordan (Somerset), H. Edwards (Bucks), A. D. Woodley and D. W. Bishop Ackerman (Berks), G. W. Avery (Cumberland), Rev. A. Downes Shaw (Norfolk), G. Hayes (Notts), R. W. Furse (Devon), Mrs. Chapman and Mr. T. W. White (Essex), and the Secretary (W. Herrod).

Letters expressing regret at inability to attend were received from Miss K. M. Hall, Miss Scott-Walker, Mr. L. S. Crawshaw, Mr. E. Walker, Mr. H. Jonas, and Mr. E. R. Stoneham.

The minutes of Council meetings held March 17 and April 14, as printed in B.B.J., were taken as read, and confirmed.

The following new members were elected: Mr. F. Kenward, East Street, Seaford, Sussex; Mr. A. Arnold King, St. George's, Silverhill, St. Leonards-on Sea; Rev. H. G. Stanley, Marshfield Vicarage, Cardiff; Mr. H. Moore, 14, Albany Road, West Ealing; Mr. E. G. Tremlett, Ruffarron, Gayton Road, Harrow; Rev. H. P. Fitz-Gerald, Lidwells, Goudhurst, Kent; Mr. A. Stapley, Brighton House, Potton, Beds; Mr. C. Garfitt, National Liberal Club, Whitehall Place, London, S.W.; Mr. E. Tyler, 440, Strand, W.C.; Mr. R. E. Weissmüller, The Rock, Frodsham, Cheshire; Mr. T. H. Harrison, 5 and 7, Cheapside, Nottingham; Mr. H. Fox-Wright, Eggerslaed Cottage, Grange-over-Sands, Lancs; Mr. R. W. Lewis, Littleover Hill, Derby; and Mr. J. C. Roberts, 95, Holland Road, Maidstone.

Applications from the Cheviot and Tweedside Borders Bee-keepers' Association and the Beckenham, Bromley, and District Bee-keepers' Association for affiliation were granted.

The report of the Exhibitions Committee was presented by Mr. W. F. Reid. The committee recommended "That the Association being now without a demonstration-tent, the secretary's offer to provide one at the forthcoming 'Royal' Show for 20s. be accepted."

Owing to the shortage of entries, it was recommended that, to save expense, a reduction be made in the number of judges, and that the secretary undertake the work of examining candidates for third-class certificates who may wish to present themselves at the "Royal" Show, with any help from members of Council he may be able to obtain. The recommendations were adopted.

The Finance Committee's report was presented by Mr. J. B. Lamb, and it was resolved "That it be recommended to

the Council that payments be made amounting to £50 6s. 3d."

The receipts for the month amounted to £58 5s. 4d. and payments to £70 18s. 11d., leaving a balance in hand of £198 5s. 5d.

The recommendations of the committee were adopted.

Mr. Cowan then proposed, Mr. Eales seconded, and it was carried, "That to obtain the views of bee-keepers throughout the country with regard to legislation respecting the diseases of bees, and to consider the best means of promoting such legislation, the following committee be appointed, with power to add to their number, and that the first meeting of the committee be held in the show-yard at Liverpool: General Sir Stanley Edwardes (Kent), Mr. J. B. Lamb (Middlesex), Dr. Elliot and Mr. G. Hayes (Notts), Mr. E. Walker (Surrey), Captain Sitwell and Mr. Kidd (Northumberland), Mr. Edwards (Berks), Miss Scott-Walker (Bucks), Mr. G. H. Skevington (Cambridge), Mr. G. W. Avery (Cumberland), Mr. Coltman (Derbys), Colonel Walker and Mr. Furse (Devon), Mr. J. N. Bold (Lancs), Mr. J. H. Hadfield (Lincs), Rev. A. D. Downes Shaw (Norfolk), Mr. J. Noble Bower (Warwicks), Mr. J. P. Phillips (Worcs), Mr. L. S. Crawshaw (Yorks), Mr. W. Herrod (Beds), Mr. J. Brice (Staffs), Mr. L. Bigg-Wither and Mr. L. Snelgrove (Somerset), Mr. Watson (Herts), Mr. D. M. Macdonald and Mr. W. McNally (Scotland), with Mr. Avery and Mr. Crawshaw as joint honorary secretaries."

It was proposed by Mr. Bevan, seconded by Mr. Jordan, and carried, that the names of the chairman and vice-chairman be added to the committee.

The monthly meetings of the Council were arranged for the third Thursday in each month, except August, at 4 p.m.

Mr. Lamb gave notice that at the next meeting of the Council he would move: "That, in accordance with the terms contained in Mr. E. D. Till's letter of February 18, 1910, the Apis Dorsata Fund of £20 be transferred to the general funds of the Association."

Examinations for third-class certificates were sanctioned at Cardiff by the Rev. H. G. Stanley, at Mansfield by Dr. P. Sharp, in Somerset by Mr. Jordan and Mr. Snelgrove.

It was also resolved that, if it could be arranged with one of the Association's experts now residing in South Africa, an examination be arranged there, the secretary being instructed to write to this effect to Mr. Mitchell, of Natal, who had made application.

The Chairman obtained the approval of the Council to the following resolutions of sympathy which he intended to move at the special meeting:

"We, the Council, members of the British Bee-keepers' Association, and delegates of affiliated associations, in special meeting assembled, respectfully beg to offer to His Majesty the King the expression of their deep and heartfelt sympathy in the great loss His Majesty and the nation have sustained by the death of our beloved Sovereign the late King Edward VII., who was graciously pleased to take an interest in the bee-keeping industry. At the same time, they desire to assure the King and his gracious Consort of their profound and devoted loyalty to His Majesty and to the Throne of this Empire."

"We, the Council, members of the British Bee-keepers' Association, and delegates of affiliated associations, in special meeting assembled, respectfully desire to assure the Queen-Mother of the deep and warm sympathy which they feel for Her Majesty in this time of sorrow and irreparable loss."

The secretary was empowered to purchase bookcases for the library with the funds already collected.

The secretary stated that there was some difficulty in collecting reports from some of the associations for binding and sending out. It was resolved that those obtained be bound, and the volumes sent only to those associations who had complied with the request.

The next meeting of the Council will be held on June 16.

The special meeting was then proceeded with, report of which will appear in our next issue.

COUNTY OF ANGLESEY B.K.A.

ANNUAL MEETING.

The fifth annual meeting of the above association was held in the Magistrates' Room, County Buildings, Llangefni, on Thursday, April 28, when a fair number of members attended.

The hon. sec. read a letter from Lord Boston, the president, regretting he could not attend, owing to business in Parliament, and Mr. J. R. Williams was voted to the chair.

The minutes of the last meeting were read and confirmed. The hon. secretary's report for last year was read, and the balance-sheet showed a fairly prosperous state of affairs. It was satisfactory to learn that the number of members continues to increase.

The annual honey show, held in August at Holyhead, was a great success, the entries being far in advance of former years, and the judges pronounced the quality of the exhibits staged as excellent.

Mr. W. Roberts moved a resolution that the County Council be appealed to for financial assistance in carrying on the work. It was seconded by Mr. R. R. Parry and carried.

A discussion then arose on "Foul Brood and How to Extirpate It," and it was agreed that not much could be done until compulsory powers were obtained. A resolution was passed thanking the B.B.K.A. for their endeavours to obtain the passing of a Foul Brood Bill through Parliament.

Lord Boston was re-elected president, Mrs. Matthews vice-president and hon. treasurer, Mr. O. J. Williams was re-appointed expert, and the Rev. O. Kyffin Williams hon. sec. Votes of thanks to the officers for their work in the past brought a successful meeting to a close.—O. KYFFIN WILLIAMS, Hon. Sec.

REVIEWS.

Lift-Luck on Southern Roads. By Tickner Edwardes (London: Methuen and Co. Price 6s.).—"Lift-Luck," a name which at first seems to puzzle one greatly, is a thoroughly charming book by the author of "The Lore of the Honey-Bee," presenting, with one exception, a series of delightful pictures of the rural life of Southern England from Devonshire to Sussex. One can almost see the places so graphically described, with the late autumn wild flowers, the still-beauteous heather, the singing of the birds, too, and the hum of insect life not yet quite over; and when into all this delightful freedom and quiet comes the rush of a motor-car, into which our author was beguiled, no wonder he felt strangely irritated and annoyed as he was being rapidly whirled along, unable to enjoy the sights and sounds so dear to him. It is a pleasant book to read, full of healthy, happy pictures of life among the sons of the soil, and many a pleasant hour can be beguiled away as one takes it up and realises the vividness and the truthfulness of the pictures presented to one.

Bees for Pleasure and Profit. By H. Geary. Edited by T. W. Sanders (London: W. H. and L. Collingridge. Price 1s. net).—This little book—one of a series of handbooks brought out by the *Farm and Garden*—is intended principally for the small-holder, to whom the industry should appeal, since it can be carried on in conjunction with poultry, pig-keeping, dairying, and market-gardening, and in districts where there is an abundance of clover one or more hives would afford an interesting occupation. The author, who is expert to the Leicestershire B.K.A., deals with the subject in a simple style, and the book should prove useful for its intended purpose.

AMONG THE BEES.

MAKING UP WINTER LOSSES.

BY D. M. MACDONALD, BANFF.

If I may gauge other apiaries by my own, the hives will group themselves into three divisions—strong, weak to fair, and empties. Owing, I suppose, to the last very inclement season, there are too many of the last. Thinking the matter over lately, it struck me that if the coming season is at all good, I might fill up some of these at small cost, and without drawing on strong colonies, by one or other of the plans for forming nuclei. The strong hives will be worked for surplus off clover; the second class will be strengthened, if not in time for clover, then for the heather. With due care, some of these may be the very strongest during August and September. Where queens are known to be good, both they and the few bees now in the hives will be stimulated, not only by steadily uncapping combs of honey next to the brood, but also by exchanging a comb of newly-laid eggs to a strong hive and giving the weakling a comb of almost hatching brood. In a few days these young bees will issue from their cells, and give the colony an impetus which can be conveyed in no other way. Here are the nurses ready to tend and feed the young larvæ—the very thing the weakling needed. The queen, if a good one, has laid too many eggs up till now, as there were no kind nurses to develop them into perfect insects. Now a transformation takes place. Fielders can attend to their proper duties, the youngsters attend to the larvæ, and the queen is stoked to her full capacity. After the supply of a second, or at most a third, comb of hatching brood from the very strongest stocks, now almost at the boiling-over point, the impetus to the hitherto weakling makes such a transformation that the order is "Full steam ahead." And the best of it is these bees come to full maturity just when the season allows them to make the very best of their opportunity. Two gains are derived from this exchange of eggs and brood. The strong stock is checked from contracting the swarming fever and the weakling becomes a surplus-giver instead of dragging out a condition of simple existence, if managed on the let-alone principle.

Now for the third class—the empty hives. Last year, during the month of May, I contributed two articles on "Filling Up Empty Hives" and "Increase," and I refer to them now simply to avoid recapitulation. Anyone troubled with empty hives will find quite a number of ways of filling them. At present I will deal with nuclei-forming to attain this desirable end.

The simplest plan for the novice, at

least—will be to accept one swarm when it comes out, and break the brood-nest up into, say, four or five nuclei, giving each two combs, and taking care that each of these will have one or two nearly ripe queen-cells. If the weather is settled and warm, each of these small lots might struggle through individually, but this is rather too much of a sporting chance. Therefore, break up the swarm into small lots, supplying about ½ lb. of bees to each of your five nuclei. There is no fear of any returning bees, as the swarmed workers will stay wherever they are planted down, if they are placed on well-marked sites. In each hive, in from a week to a fortnight, you will have a nice lot of bees covering three or four frames, and in favourable circumstances all will be headed by a fertilised queen. Each lot, if necessary, can be still further strengthened by a comb of nearly-mature brood from some strong hive.

A second plan for securing brood and bees to form these nuclei may be found in the very common system of placing a second body-box over or under a very strong colony in early summer, in order to supply the queen with ample room for egg-laying. Later, one of these body-boxes is withdrawn to contract the hive and throw the full force of bees into the super-chambers. Some time before the separation, if a queen-excluder is slipped between the two body-boxes, with the queen in the lower, the bees in the upper story may proceed to construct queen-cells. Leaving nothing to chance, these may be supplied on a specially-prepared frame, and in this way a nearly-ripe queen-cell can be given to each of the nuclei formed of the combs of this overhead body-box when it is withdrawn from the hive. As these bees may not be prepared all to stay on the newly-selected site, it may be advisable to confine them in their hives for forty-eight hours, and then liberate them late in the evening.

Yet a third plan may be given whereby about five hives may be filled. Make a strong colony queenless, and some days after exchange any outside combs where there may be no brood for a comb packed with sealed brood from a strong stock. In this way all the ten combs are a solid mass of brood, all sealed, when the nuclei are formed. Consequently there is little chance of any being chilled. When the queen-cells—certain to be constructed immediately the bees have discovered their loss—are sealed, proceed to break up the stock into five. Each division will have one or two queen-cells all but ready to hatch, and in due time they will get fertilised and begin to lay. The procedure is, in the main, the same as in the last case.

Feed these small lots in any case, but if the weather is not fine, and forage plentiful, a steady supply of food is an utter necessity. It might be well, too, after the staple source of nectar has become exhausted, to continue stimulative feeding, and then later rapid-feeding, to provide a full supply for winter. A frame-feeder close up to one side of the cluster is the best means for supplying food to these small lots. Work up to at least six or seven frames of food and bees.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SOUTHERN SNATCHES.

THE SOUTH AFRICAN BEE.

[7831.] I much regret I am unable to give Mr. Crawshaw the information he asks for with reference to the above. So far as I am aware, our South African bees are not distinguished by any particular name other than South African, which, however expressive it may be to bee-keepers on this sub-continent, has little or no meaning to brother craftsmen in other parts of the globe—shall I add up to the present? because I, as well as many other bee-keepers, have a strong belief that our native race of bees will become known and appreciated in other parts as well as in their native land. I say native advisedly, because, so far as is known, they have been here from time immemorial. Of course, it remains to be seen whether they would prove a success in other countries. I have never heard of any attempts at exportation. As they are free from any and every form of disease so far as is known, it would be interesting and a means to an end to try if they were any more disease-resisting in Britain than the native black bee.

There is no doubt they are a hardy race, and when it is understood that they have existed and survived under directly opposite conditions to what prevails, or did prevail, at home before the advent of modern bee-keeping, it will be at once evident that only the best remains.

The practice of the old skeppist, who destroyed only the strong, *i.e.*, heavy, stocks, keeping the weaklings or as many of them as survived the winter, is quite unknown in this country. Our bees (unless an occasional swarm, which now and again were caught and hived in a soap-box or any other empty packing-case) were permitted to find their own home, which gene-

rally turned out to be a fissure in a rock, an unoccupied ant-heap, and now and then the floor or roof of a dwelling, and more recently the advent of the railway has provided them with what seems a very favourite home. At nearly every station on the Natal line there are large metal tanks for providing water for the engines. These are supported on hollow metal columns, and into these columns the bees have swarmed very freely. This is particularly noticeable near the coast, where the lower altitude has a much warmer temperature. I have found as many as four of these columns out of a total of eight tenanted thus, and while it would be impossible for bees to exist in up-country districts where we have frosts at night under such conditions, they certainly get through the winter sometimes in very unpleasant places. That is, the strong survive, and so it has gone on for ages, until this inexorable law of Nature (inexorable in the bees' case) has left us with the very best of their race, which, with careful selection, should be capable of still greater improvement.

In appearance the South African bee is lighter in colour than the English black bee—that is, if my memory serves me right. They have five gold bands on the abdomen, the first being very fine, and each increasing in width as it nears the extremity. As a rule, they are a gentle bee to work with, but there are exceptions —very strong exceptions, too—and it is always well to be prepared. The queens are very prolific, and in the height of the season will keep ten to twelve frames full of brood for several months. This, of course, must ultimately end in swarming, which it does, though even this propensity can be kept in check with plenty of liberty and ventilation in the hives.

There are a few peculiarities in the race which it is interesting to note. Towards the fall they pile great quantities of propolis just inside the entrance, leaving only small holes little larger than will admit a drone. If the entrance is contracted generally, one or two holes are all that are left in this protecting wall, but with a wide entrance there may be five or six at different points. We can only conjecture for what purpose this is intended. It may be to provide a protection against the driving winds that are so prevalent during the winter months, or more likely it is a fortification to keep out enemies, one of which is found very often in late autumn trying to effect an entrance. I refer to the Death's Head Moth, which is fairly numerous in this part. I have seen them fly from hive to hive late in the afternoon trying in vain to effect an entrance. Is this not another instance where this wonderful little insect brings reason to its aid in its endeavours to cope with the obstacles in its environment?

Another peculiarity is that no dead bees are allowed to remain in the vicinity of the hive for any length of time; no matter what other duties may claim the attention of the inmates, this is one that must be attended to at once, whether the dead be drone or worker. Robbing and fighting may take place in which many may be killed, yet half an hour after it has subsided there is not a dead bee to be seen to tell the tale. I remember on one occasion a sudden hailstorm working havoc among the fielders of my hives. They seem to have been knocked down as they tried to gain the entrance. On arriving at the hives just after the storm had passed, I found hundreds of dead bees all about, but already the bearers were on the scene, and worked with such a will that not a dead bee could be seen anywhere in an incredibly short time. I am not prepared to explain this peculiarity, but no doubt it emanates from a concern for the safety of the living in removing what might prove an attraction for an enemy.

Having already trespassed too far on your valuable space, I refrain from any more remarks on the South African bee for the present.—HENRY MARTIN, Dannhauser, Natal.

IN COUNCIL.

[7832.] My first visit to the Council of the B.B.K.A. mainly concerns myself, as it took place when I sat for my first-class examination. After waiting in an ante-room with half a dozen others I was ushered, in my turn, into the presence of that august body, there to talk to them as if they knew nothing about bee-keeping—a palpable absurdity—and then to submit to close cross-examination by anyone who chose so to favour me—a process somewhat like skinning eels alive. The result, so far as I am concerned, would be of no interest to your readers. But for years before and since I had carefully perused the highly-condensed reports of the doings of the Council appearing in the B.B.J. with much awe, and withal an ever-deepening impression of the high position and potency of the members of that Council.

It may be imagined, then, with what trepidation, after more than a dozen years, I again stood at the door, wondering what the reception would be for a mere country delegate. Should I even be admitted at all? What would be the use if I were? What could I do there? How could I endure the sidelong looks of amazement if, taking a keen interest in the business, I dared, on my feet, to say "Mr. Chairman"?

Well, I was admitted. The Chair-

man bore a name perhaps the foremost among bee-keepers, but his face was one I had seen before, and his words had been those of kindness. The secretary—well, everybody knows him, and though I missed the face so familiar in the "Guide Book"—that of the late Mr. Carr—I saw at once that I had three other esteemed friends among the gentlemen at the table.

But what impressed me most, and what I wish all members of our county associations could know, is this: that if the associations will exercise their new powers of delegation, their representatives will not be "sat upon." The members of the Council are no clique exercising arbitrary and autocratic powers, but are earnestly, almost painfully, anxious to get at the real feeling of the county associations, and, if they can get to know it, to give it effect. They want to encourage and help bee-keepers. Previous impressions had been that highly-gifted men had given freely of their time and thought to promote bee-keeping, and deserved the gratitude of our special community. But that they did it all with such an absence of claim to superiority or authority of any sort was a revelation. Indeed, I am not sure that some of us who were there for the first time might not learn a lesson of modesty from our experience. This I am sure of, that if our associations are as anxious to keep those able and influential leaders in office as the leaders themselves are anxious to secure the assistance, the voice, and the activities of the branch associations, the fresh vigour lately imparted to the whole B.B.K.A. must prove to be only an earnest of far greater advances in the near future.

I have consulted no one but our county secretary in submitting this contribution for your editorial consideration—I hope not for your w.p.b.—COUNTY DELEGATE.

WINTERING BEES IN MINNESOTA.

[7833.] During the latter end of October and the first weeks of November last year I examined my bees, and fed all found short of stores with syrup made with 2 parts of cane sugar and 1 of water, warmed so as thoroughly to melt the sugar. On November 13 I put seventeen colonies into an ordinary house cellar, with a partition fixed so as to give them a dark room to themselves. The bees are kept in ten-frame dovetailed single-walled hives with flat roofs. I simply lifted them from summer stands, with bottom boards and covers remaining on, and a ¼-in. opening in one end the width of the hive. They were placed in the cellar on racks 6 in. above the floor, the openings being towards the wall. In another room in the cellar I had a small stove, which kept the temperature very near 45 deg. Fahr. all winter. The bees were quiet, and did not consume largely of the stores. All were good colonies but four—two nuclei and two lots driven late in the fall. The two driven stocks wintered almost wholly on sugar-syrup, coming through in fine condition. The two nuclei were too weak, I suppose, and succumbed during the winter.

After a long night of four months, when March arrived the weather became so warm that I brought the bees out of the cellar about one month earlier than usual. They are building up finely now, and will be ready for the honey-flow, which is largely from white clover, linden, and a little alfalfa.

Bees in this part of the country, where we have long, cold winters, are usually wintered in cellars; but some bee-keepers use double-walled chaff hives. The wintering is generally reported good, and the outlook promising for a good season.—EDWIN EWELL, Waseca, Minn., U.S.A.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Candied Stores (No. 9, page 176).—"D. M. M." easily wipes off his score of causes for winter loss. This one is difficult of detection—by casual inspection, at least. Yet it is a real danger, and when combs contain old honey a cell or two here and there should be opened. In this connection I wish to further record my experience. I have in the past taken up a strong attitude against heather honey as winter food—so much so that I am informed that I have been responsible for certain stocks remaining at home! Well, if the object of their abandoned visit to the moor was solely for winter stores, I think they did well to stay at home, for the cost and labour of feeding satisfactory syrup could be no more than that of packing, travelling, and boarding them, quite apart from the possibility of no equivalent and of subsequent risk. But to go back, my stocks which went to the moor last autumn have come through perfectly, and are generally better than their Cinderella sisters. This has not always been the case, in spite of their being in autumn the strongest well-queened stocks. Yet this happy result has left me unshaken in my view that heather honey is generally undesirable for winter stores. For all my moor-going stocks were previously well stored, and I reason that what honey did go into the brood-chamber was either used before granulation or has been since removed for brood-rearing. I am sure that it did granulate to some extent, because the granules were in evidence on the floors, and all the samples which I retained to mark progress showed the usual coarse, sugary lumps in both the sealed and un-

sealed portions, although not to so great an extent as some years, and less so in the earlier-gathered honey than in the later. So I would still urge the importance of sending stocks well provided, both as a provision against shortage at the moor and the exigency of the winter.

Sour Honey (No. 10, page 177).—Another cause of this is that honey has at some time been allowed to sour in the combs. Then, later, these combs have been given to the bees to clean up and use. It is most important that cleaning up should be done immediately after extraction, and that brood-combs should not be stored away either in an unsuitable place or containing unsealed honey. Sour honey often results, and I doubt if the combs can ever become perfectly sweet.

Candy (No. 14, page 177).—Is it because this entices the bees into the open that "D. M. M." styles it an "emergency" ration? To do it justice, it has other uses than as a winter food alone. For keeping bees gently occupied during a dearth, with the minimum of feeding attention, it deserves a good word.

Mice (No. 20, page 177).—Last, but not least! The little beasts! Pretty and bright-looking, intelligent beasts they are, too, so that I can hardly bring myself to kill them, even in the moment of exasperation. They are responsible for several of my losses this year. I use a chamber under the brood-nest, and the large entrance to this seems to have been insufficiently screened. This was quite satisfactory in my old location, where the field-mouse is not so plentiful, or where, possibly, I owed more than I knew to a favourite old cat. Here my hives are placed in a poultry-run, fenced with cat-excluder. Be that as it may, the entrances should be mouse-proof, and a woven wire guard or excluder-zinc would ensure this. We do not hear so much nowadays of that excellent mouse-proof device the "claustral" chamber. By the way, I see no reason why a porch chamber should not combine all its good qualities with that of a swarm-catcher. I should think that there is an opening for such a combined piece of apparatus.

A Change of View (page 179).—This letter by Mr. Patchett almost presents in a nutshell the case for legislation, and the instance he gives is well worth investigation and note.

Comb-fumigation (page 190).—I think that Mr. Woodley's method of arranging the racks might be quite satisfactory with bisulphide of carbon. But I do not think that the sulphur candle will kill the wax-grubs. For this is the purpose of the bisulphide, and not the destruction of "germs." At any rate, my experiments with sulphur have not given the desired result, whilst the bisulphide is infinitely simpler and more satisfactory. Perhaps someone else will try both methods and let us have his conclusions.

Wiring Frames (page 190).—"If two wires are enough," says Mr. Harris. But I do not remember that I agreed to this. If foundation will buckle anyhow, as he suggests, the extent of the outward buckling must be reduced with the lessening of the distance between the wires. I may say that I run a trickle of hot wax around my frames, and have no trouble with buckled corners.

Queries and Replies.

[4015.] *Making Artificial Swarm.*—I intend to make an artificial swarm as per directions on page 95 of "Guide Book." Would it be right to put in a brood-frame containing a sealed queen-cell? I have no laying queen at hand, but in one stock (my weakest one, which I was intending to unite) there are two queen-cells in course of completion. I thought if the flying bees would accept them, or one of them, I could utilise them and so save time.—HEATHER, Sidmouth.

REPLY.—You can give the brood-frame with queen-cell as proposed, provided there are other combs containing hatching brood.

[4016.] *Thick v. Thin Foundation.*—What advantage has heavy brood-foundation (six sheets to the pound) over light foundation (nine sheets to the pound)? Either there is too much wax in a sheet of the former or too little in the latter. On the other hand, the light foundation is not so expensive, as it suffices for nine frames as against six, at any rate to start with. But if the bees have to bring in more wax when thin foundation is used than when thick is supplied to them, it is but false economy.—H. E. G., Jersey.

REPLY.—The heavy foundation is used in frames that are not wired, to get strong combs by having a thick midrib. If you wire the frames you can use foundation ten sheets to the pound with the best results. Bees do not "bring in" wax; it is secreted in their bodies from honey.

TRADE CATALOGUE RECEIVED.

MESSRS. AUSTIN AND MCASLAN (*89, Mitchell Street, Glasgow*) send a comprehensive catalogue of bee-hives and appliances of various kinds. It also includes a summer list of seeds, bedding and decorative plants, and gardening tools, all the goods illustrated being of moderate price and good workmanship.

Bee-Shows to Come.

June 7 to 10, at Winchester.—Honey and Hive Exhibition, under the direction of Hants and Isle of Wight B.K.A., in connection with the Royal Counties Agricultural Show. Schedules from E. H. Bellairs, Hon. Sec., Bransgore, Christchurch, Hants.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B B.K.A. Prizes arranged in groups of counties for Associations affiliated to the B.B.K.A. **Entries closed.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A. Prizes value £30. Entry forms on application to J. H. Hadfield, Hon. Secretary, Alford, Lincs. **Entries close June 10.**

July 21, at Southwell.—Annual Show of the Notts. B.K.A., in connection with the Horticultural Society's Show. Open class for Sing.e 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close June 25.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

BEES IN A PORTMANTEAU.

Messrs. Cairncross and Zillen, the well-known South African bee-appliance firm, send us the following cutting, taken from the *Pretoria News* of April 19 last:

"Yesterday morning Messrs. Cairncross and Zillen received a telephone message from Government House that a swarm of bees had taken possession of a portmanteau which had to be packed for Lord Selborne's departure. The bees were removed. Three weeks ago a swarm occupied the bottom drawer of Lord Selborne's wardrobe, and the same firm removed the bees."

Notices to Correspondents.

H. J. S. (Harwich).—*Controversy and Foreign Matter.*—We endeavour to keep our readers informed of all the progress made in bee-keeping, and if the industry is to hold its own against foreign competition it is necessary for us to know what other countries are doing. It is assumed that everyone who takes in the JOURNAL is already the possessor of the "Guide Book" or some other handbook on bees, which should teach him the business, and if in any difficulty he can refer to the B.B.J. for information. That such information is useful and is appreciated we have abundant testimony, without referring to the replies to queries appearing in every number. During last year upwards of 900 queries were replied to, showing that a considerable number of bee-keepers avail themselves of the opportunity of obtaining information. It is only by allowing discussion in our columns that we can get to know the wishes of bee-keepers—on such an important subject, for instance, as foul-brood legislation—but we endeavour to keep controversies within proper limits and without encroaching on space devoted to other matter. We are so used to receiving appreciative letters testifying to the usefulness of the JOURNAL that it is a novelty to have fault found with "so much controversy and foreign matter." The monthly *Record* already fulfils the conditions desired by our correspondent in teaching practical bee-keeping, and it is for the B.B.J. to keep its readers informed of the progress made throughout the world in regard to both the science and practice of bee-keeping.

G. M. A. (Sussex).—*Super-honey from Diseased Hive.*—1. The honey in super may contain germs of the disease, but (2) it is quite harmless to human beings, and can be eaten with perfect safety. 3. Care must be taken that no bees have access to it, and the vessels used should be thoroughly washed or disinfected on that account.

N. P. S. (Bedford).—*Diseased Bees.*—Your bees are evidently attacked by *Bacillus Gaytoni*, not a common affection, which sometimes occurs in spring, when numbers of these hairless, greasy-looking bees are driven out of the hive, and die in clusters in front of their homes. The disease is supposed to be connected with the queen, and replacing her with another usually banishes the symptoms, although this is not always effective. At the same time, the bees should be fed on medicated syrup and comb-building encouraged.

BEGINNER (Renfrew).—*Honey-comb Designs.*—What you require is a super about 3 in. deep, outside measure, and of suitable size according to the design you wish the bees to work. The word or device is sketched in the super, and indicated by dotted lines, to which strips of foundation are fixed. This done, wooden blocks cut into the necessary shape are used to fill up the interstices and confine the bees to the comb-

space occupied by the letters when fully built out. Any appliance dealer would make such a super for you, and some of them stock them ready for use.

B. B. (Ramsgate).—*Storifying for Surplus.*—1. Leave the combs in their place and put the frames with foundation on the outside. 2. No; the queen at once commences to lay, and the workers store above the brood-nest. 3. No: it the queen is with them there is no danger of the bees absconding, but they begin to work as a new swarm. 4. You may either add frames or contract with a dummy. The close spacing only prevents the rearing of drone-brood, and does not interfere with the work above. 5. Remove the drone-brood, or decapitate it and let the bees remove it. The bees will cut down the comb to the proper thickness. The tiering-up takes place when the honey-flow has commenced.

G. T. M. (Cambs). — *Drone-breeding Queen.*—1. You can safely unite a swarm to a colony by carrying out the instructions on page 107 of "Guide Book." 2. If you give a frame of brood for the purpose of raising a queen you must find and remove the drone-breeding queen first. 3. The plan you propose would not succeed, owing to the lack of brood in the weak colony.

A. R. P. (Taunton).—*Queen Cast Out.*—The queen sent has been damaged, as the first abdominal segment is indented. This probably occurred when you put in the additional frames. The fore feet are also absent, and there are other evidences that she has been "balled."

J. A. M. (Edmonton).—*Fertile Worker.*—The comb shows the presence of a fertile worker, and has also incipient foul brood.

A. P. (Alfriston).—*Fertile Worker or Virgin Queen?*—From your description of grubs in scattered worker-cells, it is probably a fertile worker: but you will be able to tell better when the cells are sealed over.

Cymro (Llangollen).—*Using Drawn-out Combs.*—If the bees died from starvation only, it will be quite safe to hive a swarm on to the combs, but to make quite sure it will be well to fumigate the combs with sulphur fumes. As all the combs are already drawn out, the super can be put on at the same time as the swarm is hived.

Small-holder (Hants). — *Information Respecting Foul Brood.*—This subject is fully treated in the "Guide Book," and has been thoroughly discussed in B.B.J., in which all that is known about it has been published. 1. It is well known that the disease is endemic in some parts of Italy, but owing to the mildness of the climate it is easily kept in check. 2. So long as no steps are taken to exterminate the disease bee-keepers may always expect to have an outbreak. 3. You are correct with regard to the appointment by the Board of Agriculture of a committee to inquire respecting the working of the Swine Fever Act.

Suspected Combs.

W. J. P. (Ringmer).—Comb contains both chilled and black brood, and unless the colony is very strong destruction would be the safest plan to prevent the disease from spreading.

W. J. W. (Plymouth).—Remove the comb containing the few cells of foul brood and destroy it. Treat the hive as recommended on page 179 of "Guide Book."

A. C. C. (York).—The stock has evidently been in a bad state, as it is infected with black brood, and, judging from the condition of the bees in cells, they have also been short of food.

X. Y. Z. (Manchester).—The disease affecting your stock is black brood. There are also traces of wax-moth in the comb.

F. S. (Barnt Green).—The brood appears to be chilled only, but we should advise watching the stock for signs of black brood, as there are suspicious indications, which will develop it the disease is really present.

A. W. (Colchester).—Bees appear to have died of starvation. This sometimes happens in spring, when from various causes no honey is coming in, and stocks, breeding rapidly, are crowded with bees. The food-supply at such times should not be neglected, as the consumption of stores is very great, and if not replenished when used up may result in the death of the stock.

Denbigh (Wrexham). — The comb is affected with foul brood in a mild form.

Special Prepaid Advertisements.—*Continued.*

PRIME NATURAL SWARMS, 12s. 6d. each, or 2s. 6d. per lb.—GEORGE BELL, Shoreham, Sevenoaks. a 45

GRANULATED HONEY.—4 dozen 1-lb. Mono Service Vessels, 7s. 6d. dozen.—NICHOLSON, Langwathby. a 46

LOT APPLIANCES, Hives, Drawn Combs.—MONTE FRANCIS, 32, Regent-road, Great Yarmouth. a 47

NATURAL SWARMS, from strong healthy Stocks, 15s. till 15th of June, 12s. 6d. after; empty box to be returned.—DENNIS, Brownsover, Rugby. a 48

A LIMITED QUANTITY OF STRONG BORAGE PLANTS FOR SALE, splendid for Bees. Price 20 for 6d., carriage paid.—HEWETT, Carrington-road, Dartford. a 42

2 LIVER AND WHITE SPANIEL DOG PUPPIES, 3 months. Sell 15s. each; or exchange for Swarms.—PIERCE, Baker-street, Enfield, Middlesex. a 41

SEVERAL NEW "W.B.C." HIVES, painted, 12s. 6d. each; offers for exchange invited. Cash returned if not approved of. — WILLETT, Bee-keeper, Malden, Surrey. a 39

4 NEW "W.B.C." HIVES, complete, 14s. 6d. each.—J. BOWDEN, Broomhill, Witley, Surrey. a 37

SEVERAL STRONG RACKS DRAWN-OUT SHALLOW FRAMES, clean, straight, 5s. 6d. each; Section Crates, with Sections and Dividers, 2s. 6d. each; large Solar Wax Extractor, 17s. 6d., cost 35s.—PIDDUCK, Grove House, Alsager, Cheshire. a 36

SELLING OFF.—Empty Hives, cheap, good condition, 5s., 7s. 6d., 10s.—Write particulars, G. H. HICK, Wayfield, Bathealton, Bath. a 35

FOR IMMEDIATE SALE.—Complete Apiary, 40 Strong Stocks, in good Standard Frame Hives, with 60 Racks Drawn-out Shallow Combs, &c. Offers invited.—A. GREEN, Tangley, Andover. a 33

4 BAR HIVES, practically new. Sale or exchange.—WALLACE, Learney, Torphins, Aberdeenshire. a 32

6 VOLUMES B.B.J. (unbound), 1904 to 1909, sent carriage paid for 15s.—L. M. BEAR, Magham Down, Hailsham. a 31

WILL BOOK FEW SWARMS, 12s. 6d., or on 6 Frames Wired Full Sheets Foundation, 17s., from clean Stocks. Cash with order.—SOFTLY, Letchworth, Herts. a 30

WANTED, Observatory Hive. Give details and cash price, carriage paid.—GARFITT, Llanerfyl, Welshpool. a 27

A PRACTICAL BEE-KEEPER OFFERS HIS SERVICES, at home or abroad; 12 years' experience (7 in West Indies); moderate wage.—NECTAR, c/o "Bee Journal." a 24

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture postcards or for advertising purposes, 2s. 6d., post free.—Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

FOR SALE, 5 Crates Sections, with Foundation and Separators.—Particulars, GILBERTSON, 43, High Annan, Dumfriesshire. a 19

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

Special Prepaid Advertisements.—*Continued.*

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

SWARMS.—Pure Black, 14s.; Italians, 20s.; this week if fine.—G. THOMAS, Coedmelyn, Stackpole, Pembroke. a 43

STRONG NATURAL JUNE SWARMS, 12s. 6d. each; satisfaction guaranteed.—FOLDS, Church-street, Luton. a 28

NATURAL SWARMS, 12s. each.—ILLIDGE, Albrighton, Wolverhampton. a 29

NATURAL SWARMS, with young Queens, for delivery before June 21st, 2s. 6d. lb.; afterwards, 2s.—MASON, Moorend, Yardley Gobion, Stony Stratford. z 96

YOUNG QUEENS, 3s. 6d.; Virgins, 1s. 6d. Safe arrival guaranteed.—TOLLINGTON, Woodbine Apiary, Hathern, Loughboro'. a 38

50 LOTS DRIVEN BEES WANTED EARLY AUGUST.—W. H. SIMS, Hall Green, Birmingham. a 34

HEALTHY JUNE SWARMS, 11s. each, on 10 Frames, 15s.—COOK, Worlington, Soham. z 99

HEALTHY SWARMS, 14s. each, best strain, guaranteed safe arrival; inspection invited Wednesday afternoons.—P. HANSEN, Gardener and Bee Expert, 3, Gladstone-cottages, Norwood Green, Southall. z 98

STOCKS OF BEES, in prime condition, on 8 combs, £1 5s.; Virgin Queens, English Black, in introducing cage, 1s. 6d. For sale, cash with order.—T. D. SINFIELD, 26, Upper George-street, Luton. a 18

NOW READY.—Austin and McAslan's complete List of Hives and General Bee Appliances, post free on application.—89, Mitchell-street, Glasgow. z 80

250 SWARMS WANTED.—E. H. TAYLOR, Welwyn, Herts.

ITALIAN QUEENS DIRECT FROM ITALY.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," May 5.

QUEENS, Fertile.—Brice's reliable strain, in speciality introducing cage, 5s. 6d.—BRICE'S APIARIES, Otford, Kent. z 66

GUARANTEED Prime Natural Swarms, from 170 Colonies, May 3s., June 2s. 3d.—SOUTHCOTT BROS., Gittisham, Honiton. z 6

WANTED, 100 Swarms.—Apply, stating price per lb., to HERROD AND STEWART, Apiary, Luton, Beds.

BOOK FOR EXHIBITORS, 7d.—JOSEPH TINSLEY, Stone, Staffs. y 25

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. Terms: Tea, bed, and breakfast, 3s. 6d.; or full board, 5s. per day.—HORSLEY'S, Merridale House, top of Castle Drive, Douglas, Isle of Man.

SECTION GLAZING.—Best quality Lace Paper, made especially for Bee-keepers' use, not common box edging, white, 100 6d., 300 1s. 4d., 500 2s. 3d., 1,000 3s. 9d., post free; blue, green, or pink, 100 7d., 300 1s. 6d., 500 2s. 6d.; Lace Bands, 2⅜ in., 3 in., and 3½ in. wide, white, 100 1s. 2d., 200 2s. 3d., 500 4s.; a few in pink and blue, 100 1s. 4d., 200 2s. 6d.—W. WOODLEY, Beedon, Newbury.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The special meeting to consider the reorganisation of the B.B.K.A. was held at 11, Chandos Street, Cavendish Square, on Wednesday, May 18. Mr. T. W. Cowan presided. There were also present Miss Gayton, Messrs. W. F. Reid, E. Walker, T. Bevan, C. L. M. Eales, J. B. Lamb, E. Garcke, A. G. Pugh, J. Grimwood, O. R. Frankenstein, R. T. Andrews, G. H. Skevington, Dr. Elliot, Captain Sitwell, General Sir Stanley Edwardes, A. W. Salmon, J. Turner, L. McNeill Stewart, J. Kachler, G. W. Judge, E. Kearney, W. Gee, J. C. Mason, R. V. B. Best, F. W. Watts, Colonel H. F. Jolly, S. Jordan (Somerset), D. W. Bishop-Ackerman and A. D. Woodley (Berks), H. Edwards (Bucks), G. W. Avery (Cumberland), R. H. Coltman (Derby), R. W. Furse (Devon), Mrs. Chapman and T. W. White (Essex), W. E. Hamlin (Surrey), A. R. Moreton (Worcs), G. Hayes (Notts), Rev. A. D. Downes-Shaw (Norfolk), and the Secretary (W. Herrod).

The resolutions of sympathy with the King and Queen-Mother, as agreed to at the Council meeting, were proposed by Mr. Cowan and seconded by Mr. Reid. Those present signified their approval by a silent upstanding vote.

Mr. Cowan then said the scheme had been before them for some time, and they had had ample time to read and discuss it amongst the associations. Reports had been received from various associations, and he found the following objected to the scheme: Lincs, Bucks, Cheshire, Crayford, Berks, North Norfolk, Lancs, Staffs, Leicester, Cumberland, Derbyshire, Cambs, Notts, and Tweedside Border, the only two agreeing being Somerset and Devon. It was now open for discussion, and he hoped all would give their views.

Mr. Lamb suggested that the scheme be considered by sections instead of as a whole, and moved that Section 1, as under, be adopted, Mr. Garcke seconding the resolution:

"(*a*) The present members of the B.B.K.A. shall be formed into a central branch, and the present council of the B.B.K.A. shall be the first council of the central branch. Any bee-keeper residing in a county in which there is no affiliated association, or any bee-keeper not wishing to join an affiliated association, shall be eligible to join the central branch.

"(*b*) The present county associations shall become branches of the B.B.K.A., and shall adopt the title of B.B.K.A. with the county name of the branch affixed."

Mr. Pugh, in rising to move an amendment, said he considered the scheme a move in the wrong direction, considering the improvement shown in the condition of the Association during the past few months, both in finance and increase of membership. He considerd the Association had now turned the corner, and with a little alteration of rules they had all the machinery necessary to make a strong association. It would be a fatal mistake to change the name. He therefore moved, and Mr. Hayes seconded, "That, taking into consideration the improved position of this Association, as shown by the recently-issued report (page 3) and balance-sheet, this meeting of representatives of the various associations, together with Council here assembled, desire to express their opinion that the present machinery, rules, and regulations (with a few modifications and additions) are quite sufficient to carry on the work of this Association without going into a reconstruction scheme as now suggested."

Rev. A. D. Downes-Shaw was quite sure he was voicing the feelings of the meeting in saying how much they were indebted to Mr. Garcke for drawing up the scheme, and he hoped the opposition to it would not be considered personal. There was no doubt the matter was viewed from a very different point of view by a great number of bee-keepers throughout the country. The scheme was excellent in many points, but it was a mistake to bring it forward at the present time. The B.B.K.A. wanted strengthening, it wanted enlarging, and, above all, it wanted cash. The position of the B.B.K.A. should be very different from that of county associations: they had done splendid work, but the B.B.K.A. should stand out head and shoulders above the county associations, and should lead. It was high time the Association put itself into the position it ought to occupy. This could only be done by getting well-known people as presidents and vice-presidents, and also getting leading scientific men to come in with them. To summarise, we wanted brains, titles, and cash: the first we have, and the two latter it is quite easy to get if we set about it in the right way.

Mr. Garcke said his only object was to evolve a scheme to put the Association on a proper footing. Whether the scheme as presented was accepted or not was a matter of indifference to the committee, so long as something that would be beneficial was evolved. If it was dropped it might be a stumbling-block to future efforts. At present he estimated there were 60,000 bee-keepers in this country, only 6,500, or about a tenth part, of whom belonged to associations. We had already influential members in the presidents of county associations, and yet they did not attract. With only 6,500 members, we had but little influence to attract Royalty.

We wanted a larger number of members to do this, and he thought Mr. Pugh ignored the fundamental position: County associations are in conflict with the parent Association for the obtaining of members. There was no doubt that the appointment of Mr. Herrod as the secretary had made an important difference in the Association. In commencing new county associations, which the parent had done, they weakened their own position, because people would not belong to both a county association and the B.B.K.A.

General Sir Stanley Edwardes considered they could raise the status of the Association by altering the name. There should be no competition between the counties and the parent, and this would not be the case if notable people gave their patronage, for then it would be an easy matter to obtain funds.

Mr. Hayes understood Mr. Garcke to say that people would not join both county association and the B.B.K.A. He maintained that the greater number of members of the B.B.K.A. also belonged to county associations. He appealed to the secretary to say if this was not the case.

The Secretary: That is so.

Captain Sitwell quite agreed with General Sir Stanley Edwardes and the Rev. A. D. Downes-Shaw that the name should be changed.

Mr. Avery agreed with Captain Sitwell's remarks. Mr. Garcke had observed that there was competition between the counties and the parent; also that out of 60,000 bee-keepers only about 6,500 are members of associations. Therefore it could not be said that the competition keeps the membership of the B.B.K.A. low. There is plenty of scope to obtain members amongst the remaining 54,000.

Mr. Grimwood wanted no misunderstanding with regard to the proposal, if carried. The effect would be that further alteration could be made and the scheme would stand as it was. He would rather retain the old name by which the Association was known.

Mr. Pugh's amendment was then put and defeated.

Captain Sitwell then moved as an amendment: "That the B.B.K.A. be reconstructed on the lines of a scientific society, to be recognised as the head centre of all apicultural interests by all affiliated associations; its position and functions towards such associations being scientific, advisory, and social." After discussion, in which Mr. Jordan, the Rev. A. D. Downes-Shaw, Mr. Pugh, and Mr. Reid took part, this was put and defeated.

Mr. Edwards then moved as an amendment: "That the constitution of the B.B.K.A. needs altering so that it may be thoroughly representative of bee-keeping interests, and that a central body should be formed, to constitute a Federation of the County Associations and of the B.B.K.A."

Mr. Lamb, Mr. Reid, Mr. Pugh, and Mr. Garcke having expressed their willingness to accept the amendment, it was put to the vote and carried. It was then put as a substantive motion and carried.

It was moved by Mr. J. B. Lamb, and seconded by Mr. C. L. M. Eales, *re* Clause 2 of the scheme: "That a General Council of the Federation shall be constituted as follows:—Every bee-keeping association having not more than 200 members shall appoint one representative on the Council, and every bee-keeping association having more than 200 members shall have one representative on the Council in respect of every 200 members or part thereof, such representatives to have the power of voting by proxy, the person appointed a proxy to be a member of the Council entitled to vote. The General Council shall have power to elect fifteen additional members of Council from among the general body of members of the bee-keeping associations. The members of the Council appointed by the bee-keeping associations shall retire annually, but shall be eligible for re-election. One-third of the members elected by the General Council shall also retire annually, but shall be eligible for re-election. Provided that a retiring member shall not be eligible for re-election unless he has attended at least one meeting of the Council during the year immediately preceding his retirement."

Mr. Edwards then moved, and Mr. Ackerman seconded, as an amendment: "That for the purpose of securing representation of county associations upon the central body five groups of such county associations be formed, and that delegates from such group committees form the Central Council, together with an equal number elected by independent subscribers to the Federation." After discussion, this amendment was defeated.

Mr. Lamb's motion was then put and unanimously adopted.

The meeting having expressed a wish to take Section 4 of the scheme before Section 3, Mr. Lamb moved, and Mr. Eales seconded: "That Section 4 of the scheme be adopted, as follows:

"Each branch shall contribute to the funds of the General Council:—

"(*a*) A fixed sum of £1 1s. per annum, and

"(*b*) A sum equal to 5 per cent. of the total annual subscriptions received from members and from the central branch, other than contributions received from county councils, or from members or others for special purposes. But such

5 per cent. contribution shall not be payable until an increase in the income from annual subscriptions, as compared with the year 1909, shall enable the branch to pay such contribution, or part thereof."

Mr. Coltman moved, and Mr. Edwards seconded, as an amendment, "That county associations pay annually a subscription of £1 1s. and 1d. per member." This was carried.

The amendment being about to be put as a substantive motion, a second amendment was moved by Mr. J. B. Lamb, and seconded by Mr. S. Jordan, as follows: "That the remaining clauses of the scheme—namely, Nos. 3 to 10—be referred back for further consideration to the special committee, who shall have the assistance of some of the delegates present at this meeting."

After discussion, the amendment was put to the vote and carried, being subsequently carried as a substantive motion.

The following delegates were selected to assist the special committee in their deliberations: Messrs. G. W. Avery, D. W. Bishop-Ackerman, R. H. Coltman, Rev. A. D. Downes-Shaw, H. Edwards, S. Jordan, A. G. Pugh, G. Skevington, and E. Watson.

A cordial vote of thanks to the Chairman brought the meeting to a close.

REVIEWS.

Die Königinzucht. By Pastor A. Sträuli (published by C. F. W. Fest, Leipzig. Price Mk. 1.20, or 1s. 3d.).—This is a translation of "Queen-rearing in England," by F. W. L. Sladen, and the author tells us that it was the reading about Mr. Sladen's method of queen-rearing in the last edition of the "British Bee-keepers' Guide Book" that induced him to send for the book to acquaint himself with the way queens were raised in England. The reading of the book not only pleased him, but showed that he was on the right road in the methods he was advocating, and he therefore recommends German bee-keepers to adopt the plan expounded in Mr. Sladen's book. We are pleased to find that this has been considered worthy of being translated into German.

We have received three Russian books by M. A. Dernoff, the editor of *Ptchelovodnaya Gisn.* They are entitled *Ptcheli e ich Gisn* ("The Life of Bees"), *Oostroistvo oolya Dadana* ("Construction of the 'Dadant' Hive"), and *Glavnia pasetchnya raboti* ("Principal Operations in an Apiary"). The first two are published at Viatka, at the office of the paper *Ptchelovodnaya Gisn*, and the last by A. F. Devrien, St. Petersburg. The first is a compilation dealing with the natural history of the bee; the second, as its name implies, is a capital book giving a detailed description, with working drawings to scale, of the "Dadant" hive, so that anyone can make it. The last is a useful guide-book, and deals with the practical work. As there are only four illustrations, the descriptions are very minute, and fill 232 pages.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

FOUL-BROOD LEGISLATION.

[7834.] With the month of June we bee-keepers again hope to receive our share of the good things that Nature provides, and again our hopes run high for a good honey season. The past month was certainly a great improvement on April, but far from being an ideal month of May. Swarms have been scarce and not very large, so I hear from those located in the woods and in sheltered valleys in which fruit trees abound and the swarms come off early. Again I remind purchasers of swarms: Don't forget or omit to feed them on arrival, especially if they have come a long distance by rail. Feeding the swarm will put the bees in a good humour after the shaking-up on the journey, and they will be more likely to settle down in their new home. See that the foundation is wired in the frames; also that the hive stands level. A bottle of food given as soon as the swarm is run into the hive gives the swarm a good start, and should be continued for a few nights if the weather is cool or wet. After the first start wraps should be put on over the quilt, while a super may be given in about a week if weather is good and forage abundant.

Foul Brood, &c.—Mr. Edwards (page 194) thinks my principal objection to a compulsory Foul Brood Act is the chance of an inspector wishing to inspect a supered apiary. This argument I remember using some years ago, and it may still hold good if we ever get an Act by which a *neighbour* may lay information that he has reason to believe one's bees are suffering from foul brood. Take fruit districts, where supers are put on early in the season. My principal objection to a compulsory Act is the injury it will do

to bee-craft. I feel sure it will drive thousands of small bee-keepers out of the pursuit, to the great loss of the fruit-growers, farmers, and seedsmen, as we know how necessary the bee is in the fertilisation of plant life.

Another writer wants an Act that will wipe out the box-hive and the straw skep, and in so doing wipe out the majority of bee-keepers of the British Isles. If I remember aright, the main object of the B.B.K.A. was to help the cottage bee-keeper to a more humane and profitable system of bee-keeping, and after more than thirty years' teaching I am afraid with that particular class we have failed, and one of the principal causes of our failure (I believe) has been the lectures of experts with vans and tents expatiating on the methods of the cottager in straining his honey from his mashed-up combs, which in many cases spoiled the sale of his produce. This was often the case fifteen to twenty years ago, but as I do not attend shows and lectures now I do not say such is the case in 1910.

Another correspondent (7820) is surprised at my attitude on foul-brood legislation. I still hold that the straw skep with incipient cases of foul brood is a sealed book, as are also the New Zealand cube butter-boxes and the deep lard-pails. As to the chances of inspectors carrying foul-brood germs from apiary to apiary, he may call it "Rot," but, I ask, where is the relevancy of comparing nurses in contagious diseases with the *free* and easy foul-brood inspector? One is isolated with her patient for six or eight weeks, the ambulance takes the case away, and the home is disinfected. Will the inspector take the diseased stock away and isolate it and return it *cured* at the end of six weeks? There is no analogy between man and winged insects.—W. Woodley, Beedon, Newbury.

We have been asked to reprint the following letter—which originally appeared in the B.B.J. for September 29, 1904—as clearly disposing of all objections that have been advanced. Now that the question of legislation has been referred to a committee, who will have to ascertain the views of bee-keepers, and it has been fully discussed in our pages, we hope our correspondents will allow the matter to rest for awhile. Unless there are any fresh arguments throwing new light on the subject, we feel we shall be consulting the wishes of our readers by devoting the space to other matters.—[Ed.]

"After carefully thinking over the subject, and with due regard to the correspondence which has been going on in the pages of the B.B.J., I remain of the opinion which I held when I was one of a deputation of the B.B.K.A. in 1896 to the Board of Agriculture, viz., that legislation is called for. The reasons in favour of enactments to combat 'bee-pest' (foul brood) are so obvious as not to need recapitulation. What is much more necessary is to meet with common-sense arguments in opposition to legislative interference. The principal objections raised to such interference seem to be as follows:—

"1. *Infringement of Liberty of the Individual.*—As this point has been swept aside in the case of infectious and contagious diseases in man and animals, it has no force when urged against licence to maintain and spread a malignant disease in the animals in which bee-masters are interested.

"2. *Fear that Inspectors will Tamper with Supered Stocks.*—This suggestion seems to me first to ignore that those who would be entrusted by County Councils with the duty of visiting apiaries would be men not only possessing common sense, but possessing also decided sympathies with bee-keepers, and therefore certain to show all consideration in the discharge of their functions as inspectors. Secondly, it would probably be arranged that, except in certain, or very suspicious, cases, examination of stocks, if deemed essential, would take place either just before or after the supering season.

"3. *Legislation is said to be, on the one hand unnecessary, and on the other impracticable.*—The answer to these two points is, first, that voluntary efforts have entirely failed to eradicate, or even greatly reduce the ravages of, the disease; and, secondly, that to say that enactments dealing with it are impracticable begs the question altogether.

"4. *Legislation, where tried, has been a failure.*—If this statement means that bee-pest still exists where enactments relating to it have been in force, there is, no doubt, some truth in the allegation: but the same thing may be said with regard to smallpox, diphtheria, and scarlet fever among human beings, and pleuro-pneumonia, swine-fever, and rabies among animals; but the person who would deny a large effectiveness to the measures in force about all these diseases must possess a hardihood of obtuseness, or 'a faculty for ignorance,' or a power of reckless misstatement, any of which would disentitle him to the slightest attention.—W. H. Harris, Hayes End, Middlesex."

BEES AND WASPS.

[7835.] In reply to Mr. Crawshaw (page 200), and to give a reason for my aversion to the wholesale destruction of wasps advocated by some writers in B.B.J., I ven-

ture to send an extract from my diary written when in South Africa (I served as a Volunteer there during the war). Some day I hope to find out what the special work of the wasp is, and in the meantime I will protect my feed-holes, which ought not to be a difficult matter, and after the honey-flow contract all entrances—the guards will look after the rest. Though I have seen wasps pounce on a wax-moth, I have never seen them attack ants, earwigs, or worms.—T. A. BAKER, Chester.

"Hanging from one of the branches was a barrel-shaped object supported by a sort of net made of strips of cowhide. On closer observation I found it to be a bee-hive, owned, I suppose, by one of the natives. There seemed to be more wasps than bees about. The former, I presumed, were attacking the bees and trying to get at the store of honey, and I thought what a pity it was that Nature, so kind to some, was more than cruel to others. Why did not the Kaffir owner think of some way of destroying these obnoxious and troublesome creatures? There were not many bees flying on account of the excessive heat, as it was close on noon, and those out gathering came home with wonderful swiftness, making straight for the little entrance-hole, and disappearing within the hive as if afraid of some pursuing enemy. The wasps invariably rushed at the swiftly vanishing bee, generally reaching it just too late. One yellow rascal which managed to get inside was severely dealt with, and when at last he was cast out with a broken wing fell to the ground, where several ants were waiting for the débris of the hive. It is not pleasant to see one animal destroy another, but I felt no qualms when the little browny-black fellows pounced upon him, tore his legs and wings away, and dragged him off to their home. My sympathy was with the bees, and while I watched the one-sided battle another wasp and a bee came rolling over and over to the ground. There they separated, and the bee was just righting itself when another insect with long legs and wings, resembling a huge mosquito, pounced upon it and carried it off. This, then, was another enemy of the bees. A little white moth fluttered about the entrance to the hive, and I supposed this, too, to be an enemy, though I had no idea what harm such a small creature could possibly do, unless it was to help the ants to eat away the raw-hide supports. I was just going to knock it away with my stick, when a wasp, unable to get at the sweets, sighted the little white wings. He closed with the moth and both fell to the ground. The wasp rose, leaving nothing but a white powdery stuff to tell the tale. Another wasp alighted on the hive about an inch from the hole, determined, I fancy, to make a bold rush for an unearned dinner. But fate ordained otherwise. A long-legged insect rushed at him, and he went the way of all wicked wasps into a little crevice in the tree-trunk, where his captor had placed several other insects, including bees, silkworms, and moths. Then I thought that perhaps Mother Nature knew best after all. The wasps may in some way be useful if they destroy other insect pests, and act as scapegoats between the bees and the 'daddy-long-legs,' for I judged that if the latter had not caught a wasp he would most likely have taken a bee. So I left, taking no notice of the disappointed twitter of the honey-bird who, at least on this occasion, got no wages for his trouble."

BEE-KEEPING AND BOY SCOUTS.

[7836.] So far the Boy Scouts have been ignored by the B.B.J. and by the B.B.K.A. Why? The leaders of this gigantic movement are recommending bee-keeping to the scouts as an instructive and profitable way to invest their savings (you must know that they are taught to be thrifty). Badges are awarded to the boys for proficiency in farming, gardening, poultry-keeping, &c., and one has recently been instituted for bee-keeping.

But, in spite of all this, the ignorance at the scouts' headquarters is as pitiable as it is amazing when practical apiculture is in question. Sir Robert Baden-Powell, in his book "Scouting for Boys," after correctly stating the profits of bee-keeping to be from £1 to £2 per hive per year, suggests the way to start. He says one must first make a hive and then buy *either* a swarm *or* a queen! What "cruelty to insects"—a queenless swarm (presumably) or a swarmless queen turned loose in a hive. The badge itself has a *skep* for the sign of bee-keeping. Perhaps it is unfair to build too much on that, but the instructions for examiners require a thorough knowledge of the use of "artificial combs." Perhaps this *means* foundation, but I have a notion it means *artificial wax* as prescribed by Cheshire. I for one know no use for that.

I am a scout (I hope the news will not detract from the solemnity of this letter). I am also a member of the local bee-association and a regular reader of the B.B.J., eagerly attending shows and lectures. I want this badge, and, not knowing how to obtain it, I go to my scout-master; but he knows nothing about bees, so he asks me to arrange for my own examiner! I go to a local bee-expert, and he wants to know what standard of proficiency is re-

quired, so I tell him I believe I am up to that standard (of course, or I should not enter for it). He then examines me to find what the standard is, and I accordingly award myself the badge. But where is the credit?

Now for my suggestion. Let the B.B.K.A. send a deputation to the headquarters of the Boy Scouts at 116-118, Victoria Street, Westminster (do not attempt to break through the red tape of the correspondence departments), and offer to assist in promoting bee-keeping among the scouts. By this means communication could be established between the local bee-associations and local scout troops in the same districts. After that the associations could arrange a series of lectures for the troops, recommend the "Guide Book," &c., as standard works, and arrange for a supply of swarms. The boys would become enthusiasts, join associations, exhibit at shows, read the bee-papers, and infect others with the bee-fever, and, last but not least, vote for foul-brood legislation. I myself have started two or three boys on the hobby. By this means thousands of advanced bee-keepers may be started every year. Is this not the proposed "ideal"?

What is more important than all else, the scouts can "readily combine," as that is the essence of scouting for boys.

Is the B.B.K.A. doing its work? Every year more and more inferior honey is imported, and, being eaten by people who have never tasted honey before, it sets customers against all English and other kinds of this nutritious food. Will this proposal not solve the problem of supply? —J. B. A., Belvedere.

[We will have pleasure in bringing your letter before the secretary of the B.B.K.A. It is certainly a pity that so much good material should be wasted through ignorance of the subject.—Ed.]

SWARMING EXPERIENCES.

[7837.] I suppose each day in the expert apiarist's life among his bees brings him some new fact or experience. How much more, therefore, does the novice find to learn?

It is now my third season with bees, and I feel as if I were just beginning, and would like to consult an expert daily on some—to me—new experience. Unfortunately, I have neither a friend nor a neighbour who suffers as I do from "bee-fever." I had to report foul brood last year, but with much trouble I got rid of it, and about a fortnight ago the county expert came and examined my small apiary of four stocks and pronounced them all free from disease.

One hive he advised me to super at once. Having purposely delayed supering till his visit, and anticipating such advice, I had a super of shallow frames with fully drawn-out combs ready, and it was put on there and then. In a week the super was more than half full, and I put another similar super beneath. The upper one is now almost ready to cap, and the lower one about a quarter full. For a week or so I have seen a good many bees—between fifty and a hundred—always loafing about the alighting-board. A man who was erecting a shed near the hives in the middle of last week told me that the hive with the supers had swarmed—that they had come out in thousands and flown down the garden. He added that he had bolted, and had not ventured back for half an hour, but that on his return the bees were all coming back to the hive. I laughed at the story, and took the so-called swarming to be simply a playing flight.

On May 29 I spent most of the day in the garden, close to the hives. I saw more than one playing flight outside the supered hive. About 3 p.m. I was up at the apiary, and saw on the platform in front of the hive in question a queen walking about and trying to get on the alighting-board, which is some 6 in. from the platform. (All my hives are on wooden platforms, raised on bricks about 3 in. from the ground, and stretching some 4 ft. in front.) The queen was alone, but now and then a worker came and touched her or walked round her. She was unable, or at least made no attempt, to fly, although I could see nothing wrong with her wings; but she seemed lame in one of her hind legs. Feeling sure she had come from that hive, I raised her on a piece of stick and put her gently on the alighting-board. She promptly entered the hive, and though I watched most carefully for a couple of hours, and looked again frequently at short intervals till evening, I saw nothing more of her.

I do not wish to open and disturb the hive and see if there are queen-cells, as the bees are working so well in the supers. That might perhaps answer my question: Was what the man saw during the week an attempt to swarm, rendered abortive by reason of the queen's inability to fly, the queen then succeeding in returning to the hive, or being afraid to venture beyond the alighting-board; and was there on the day I found the queen a similar attempt, unseen by me, also frustrated for the same reason, the queen on this occasion falling from the alighting-board and being unable to return without assistance? Will the workers kill the queen now and raise another, or are they likely to make another attempt (if the former was an attempt) to swarm? Subject to your better judgment, I am inclined to let "Nature take its course," but I should like to

have your interpretation of the story.—DULWICH.

[Your surmise is quite right. The queen being injured and unable to fly was the cause of the swarm returning. We should advise you to obtain a good fertile queen and replace this one as soon as the honey harvest is over. She is evidently quite capable of keeping up the population of the hive at present, and her inability to fly no doubt saved you the loss of a swarm.—ED.]

FROM AN APPRECIATIVE READER.

[7838.] Judging by your reply to "H. J. S., Harwich" (page 220), your correspondent has been having a grumble. As a regular reader of the B.B.J. I should like to say that in my opinion more comprehensive, useful matter on bee-keeping generally could not be had. I often remark to my friends on the Editor's untiring patience in answering the endless queries of amateurs, and the great trouble to which he must be put in inspecting endless "suspected combs," &c. I consider the B.B.J. an intensely interesting paper for any bee-keeper, and if "H. J. S." is dissatisfied perhaps he will start a journal on his own lines. The fact that your journal has a world-wide circulation and is the recognised paper for bee-keepers throughout Great Britain speaks for itself.—ANTI-GRUMBLER, Birmingham.

BEE-NOTES FROM WORCESTERSHIRE.

[7839.] I safely wintered six stocks, four of which I sold in March last. One of the remaining two was very weak, only covering two standard frames at the middle of March, but they are now covering thirteen standard frames. The reason I wish to mention this is because they are headed by a queen hatched in August last year, from an egg laid by a queen hatched in June of the same year. She is not so large as some queens I have had, but she seems extra-prolific, considering the fact that she is only nine months old. I found new queen-cells in this hive on May 22, and drones had been flying for some time in both hives. We had grand bee-weather here from May 16 to May 24, temperature ranging from 60 to 76 deg. Fahr. I watched the bees this spring working on the bluebells, not going inside the bell, but working on the outside. Could you tell me what they are gathering? There are acres of these flowers in my woods.

We have heard a great deal lately of foul-brood legislation, and I for one am strongly in favour of it. I could mention numerous reasons for my opinion, but I think it is quite unnecessary to do so. I will say, however, that I have seen hives left open for months which were badly diseased, and the owners would not destroy the contents, as they said a swarm might come and occupy the hive if left open.

Last season I had some early light honey and 70 lb. of medium colour later. I sold it at 10s. per dozen 1-lb. bottles wholesale and 1s. each retail. I commenced the season last year with four stocks; I sold six swarms (averaging $4\frac{3}{4}$ lb. each), increased my apiary to five stocks, and had the honey above mentioned. My sixth lot I bought in October last. Trusting we shall all have a successful year.—CLENTONIAN, Worcestershire.

Bee-Shows to Come.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B B.K.A.

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A. Prizes value £30. Entry forms on application to J. H. Hadfield, Hon. Secretary, Alford, Lincs. **Entries close June 10.**

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c. Schedule from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 14.**

July 21, at Southwell.—Annual Show of the Notts. B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close June 25.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells.

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle.

Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

TRADE CATALOGUE RECEIVED.

F. W. L. Sladen (*Ripple Court Apiary, near Dover*).—This is an excellent catalogue of bees, queen-bees, and queen-rearing appliances. Mr. Sladen has been breeding bees by selection for honey-gathering since 1892, and has succeeded in producing certain strains which he calls "British Golden," and which are noted for their good qualities. He also supplies queens of foreign varieties, as well as queen-rearing appliances such as are used in his own establishment. The catalogue is beautifully got-up on art paper, and is of interest to every bee-keeper.

Notices to Correspondents.

H. T. (Stourport).—*Spraying Fruit-trees and Fertilisation.*—1. The medicated syrup appears to be quite good, but rather thin. 2. Spraying trees with arsenate of lead before the buds appear will not injure bees. Quassia and soft soap would only be injurious if used when blossoms are open. 3. Such a district as you mention would easily maintain sixty to eighty hives, although twenty to thirty distributed judiciously would be ample for securing fertilisation. 4. Black-currant yields a small quantity of nectar at a season when bees use it for brood-rearing, and are consequently not able to store it as surplus.

Weetley (Burley-in-Wharfedale).—*Name of Flower.*—The flower is *Medicago lupulina*, and is known in different districts as black grass, black medick, black nonesuch, hop clover, melilot trefoil, and yellow clover (sometimes sold in Ireland for the "shamrock").

Infected (Northam).—*Dealing with Foul Brood.*—1. The treatments we recommend are those advised in the "Guide Book." 2. "Izal" and camphor only arrest the growth of bacilli; they do not destroy them or the spores. Phenyle is not the same as phenol. The one is non-corrosive and non-poisonous as regards human beings, whereas phenol is highly so. Phenyle and creolin are identical. Salicylic acid is no longer used as a remedy, naphthol beta having superseded it. One and a half ounces of a 10 per cent. solution of formalin placed in a tray covered with perforated zinc is also a good remedy, and is simple of application. 3. Carbolic soap is the best disinfectant for the hands. 4. There is no occasion for the clothes to come in contact with the disease if proper care is taken in manipulation. 5. The blankets can be disinfected by being subjected to the fumes of formalin. 6. Clean drawn-out combs may be disinfected in the same way. 7. As the disease is in an early stage the formalin treatment or that recommended in the "Guide Book" should prove sufficient. 8. Yes; where foul brood is kept in check it is possible for an apiary to escape extinction, but so long as hives containing the disease are kept in the neighbourhood it would be impossible to ensure its not being introduced. 9. We have no special pamphlet with prescriptions, as these will be found in "Guide Book."

J. H. (Hassocks).—*Dying Bees.*—Most of the bees sent had nothing in their stomachs, and seem to have died from maltnutrition. Two or three had their abdomens distended, and were suffering from dysentery. From your description bees appear to be suffering from "May-pest," caused by bad food and fermentation arising from it.

T. M. (Guildford).—*Diseased Bees.*—1. The bees are evidently suffering from the "Isle of Wight disease." There is no known remedy for it. 2. The leaf was dry and shrivelled up past recognition.

V. D. (Ipswich).—*Re-queening Stock.*—The method you propose is the correct one. Re-queen, and renew combs gradually.

A. C. C. (York).—*Using Infected Appliances.*—Do not use either frames or quilts again; better destroy them. Scorch the inside of the hive with a painter's spirit-lamp, especially corners and crevices, and it can then be used with safety.

Somerset.—*Brood Hatching Itself.*—It would be just as reasonable to expect chickens to hatch without incubator or hen.

F. V. (Barnes Green).—*Varieties of Bees.*—The bees were badly crushed in post (they should have been enclosed in a small tin box), but so far as we can see in their flattened condition No. 1 is a hybrid Ligurian, Nos. 2 and 3 ordinary British black bees. Thank you for kind appreciation of the B.B.J.

W. Munro (Nottingham).—*Future of the B.B.K.A.*—You will see that at the special meeting of members and delegates of county associations, held on May 18, certain resolutions were carried as amendments to the scheme which completely change the constitution of the B.B.K.A., and if adopted will extinguish it as an association. The scheme as originally proposed has not been carried, and the alterations

embody the principles you advocate. Should the members of the B.B.K.A. consent to the proposed changes, it will be for them to decide what they will do with the capital and other property of the Association. The financial part of the scheme has been referred back to the committee, which was strengthened by the addition of eight of the county representatives. When they present their report, no doubt another meeting with the delegates will be arranged.

M. H. (Hamble).—*Dead Bees.*—The bees were not fit for examination, being dead and nearly dried up. They may have been chilled, but from your description they are probably suffering from the disease prevalent in your county. There is no known remedy, but keeping warm, feeding, and encouraging comb-building are recommended. All dead bees should be burned and the ground around the hives disinfected.

H. R. (Didsbury).—*Deserted Nucleus.*—1. It is not safe to make a nucleus without brood; therefore it is not surprising that the bees should have deserted it, and probably joined the swarm. 2. If there is no queen present bees will generally return to their hive after clustering, and it is unusual for them to remain in a hive without a queen. 3. Bees from nuclei sometimes swarm out when the queen leaves for mating (see page 134 of "Guide Book"). 4. If the queen had flown off during hiving, the bees would have followed her. 5. What you have taken for an egg is evidence of the queen having mated. 6. Particulars of examinations will be sent you by the secretary of the B.B.K.A.

G. T. (Clitheroe).—*Time for Re-queening.*—If your stock is a 1908 swarm the queen is probably three years old now, and it will be advisable to re-queen as soon as the honey-flow is over for this season.

Cantab (Cambridge).—*Disinfecting Hives.*—The best and safest method of disinfecting hives is by means of a painter's spirit-lamp, the flame from which searches right into every nook or crevice inside the hive, effectually destroying any spores that may be lodged there. Frames are so inexpensive that they are not worth the trouble of disinfecting. Soaking in a disinfectant would be a long and expensive process, and we consider the above a more effectual, quicker, and cleaner method. Formalin, if used on the hands, makes them rather sore and roughens the skin. The best non-odorous disinfectant is mercuric chloride, which is sold in tabloid form. Great care must be exercised so that no one may by mistake eat the tabloids, as they look very like sweets, and though an antiseptic and good for outward wounds, it is fatal, even in a minute quantity, if swallowed.

F. S. (Wooler).—*Bee-nomenclature.*—The insects are both females, *Andrena rosæ*. They look as if they had come from a cold district.

J. W. W. (Wrexham).—*Wild Bees.*—The "swarm" was evidently a nest of the leaf-cutter bee (*Megachile*), as the specimens sent were of that species.

Suspected Combs.

H. E. W. (Sevenoaks).—The comb is affected with foul brood. No letter was received with your parcel.

Anxious (Jersey).—The comb contains sour brood, which does not often occur alone, being generally found in company with foul brood. Treat as for foul brood. It is often found effective to replace the old queen by a young and vigorous one (see "Guide Book," page 183, chapter on Diseases).

J. R. (Wrangham).—The bees had evidently gradually dwindled, through the cluster being small and unable to keep up the temperature. The brood in sample of comb was chilled only.

Radnorian.—There is both sour and foul brood in the comb; also evidence that wax-moth has been breeding in the hive. The stock is worthless, and should not be united to healthy bees. The Hereford B.K.A. is now defunct, but you might join either the Shropshire B.K.A. (hon. sec., Mr. S. Cartwright, Shawbury, Shrewsbury) or the Worcestershire B.K.A. (hon. sec., Mr. J. Phillips, Spetchley, Worcester).

A number of letters, &c., are held over till next issue owing to pressure upon our space.

Special Prepaid Advertisements.—*Continued.*

IMMEDIATE DISPOSAL.—2 "W. B. C." Hives, 12s. 6d. each, guaranteed healthy; "Raynor" Extractor, chain gearing, taking 4 frames or sections, 22s. 6d.; Ripener, 7s. 6d.; Smoker, 1s. 3d.; 2 Section Racks, 1s. 3d. each; 2 Shallow-frame Racks, with drawn-out Combs, 3s. 6d. each; Section Block (Lee's), 6d.; large Skep, 1s.; as new; spare Hive, 2s. 6d.; carriage forward. — FERRIDAY, Fouroaks, Birmingham.

BEE-HIVES.—"W. B. C.," 6s.; Cottagers', 4s.; large "Sandringham" Hives, 16 frames, 10s.; Foundation, 1s. 6d. lb.; Section Racks, Shallow Boxes, large geared Extractor, 15s.; Ripener, 5s. State wants; giving up.—J. GRATTAN, Expert, 54, Herbert-road, Plumstead, Kent. a 68

PRIME NATURAL SWARMS, 12s. 6d. each; prompt delivery.—GEORGE BELL, Shoreham, near Sevenoaks. a 59

FOR SALE, "Rymer" Heather Press, twice used, £2.—D. VALLANCE, Dunaskin. a 63

FOR SALE, dozen secondhand Hives, complete with Shallow-frame Supers and Drawn-out Combs, also Honey Extractor. Best offer accepted. Can be seen by appointment.—LONG, Stanbridge, Downend, Glos.

12 DOZEN HOUDAN-BUFF ORPINGTON CHICKS, 3 to 7 days old, Cooks' direct strain, 5s. dozen; reduction for the lot; and 3 dozen carriage paid.—MASON, Moorend, Yardley Gobion, Stony Stratford. a 40

4 STOCKS BEES, bar-framed Hives, Section Racks, and Dividers, complete, in good condition.—Apply, W. BARNES, Bear Wood, Wokingham, Berks. a 56

FOR SALE, Bee House, portable, new, 9 ft. long, 5 ft. wide, 6½ ft. high, could be used as a pantry, &c., £6; quantity of Bee-appliances, cheap.—MISS DIXON, The Green, Harlow, Essex. a 55

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige?—HERROD, Apiary, Luton.

OVERSTOCKED.—Will sell, or exchange for Swarms, new Frame Hives, value 10s., or Hives nearly new, 7s., cheap.—DAVID HUNTER, Craighead, Abington, Lanarkshire. a 53

EXCHANGE PARROT CAGE AND CASH FOR SWARM.—BOULTON, 34½, Stephens-road, Leicester. a 52

FOR SALE, or will exchange for Bees, 16 pure White Wyandotte Chickens, from prize strain; also three lots of Chicks, mixed. Giving up.—Apply T. MAYNARD, 175, High-street, Guildford. a 51

A DOZEN RACKS OF TEN DRAWN-OUT SHALLOW FRAMES, or eight, 2 in. ends, 5s. 6d. each; also few Drawn-out Standard Frames, two Extractors, Ripeners, and used Section Racks, 9d. each.—HEWETT, Alton, Hants. a 50

A LIMITED QUANTITY OF STRONG BORAGE PLANTS FOR SALE, splendid for Bees. Price 20 for 6d., carriage paid.—HEWETT, Carrington-road, Dartford. a 42

LOT APPLIANCES, Hives, Drawn Combs.—MONTE FRANCIS, 32, Regent-road, Great Yarmouth. a 47

4 NEW "W.B.C." HIVES, complete, 14s. 6d. each.—J. BOWDEN, Broomhill, Witley, Surrey. a 37

SELLING OFF.—Empty Hives, cheap, good condition, 5s., 7s. 6d., 10s.—Write particulars, G. H. HICK, Wayfield, Batheaston, Bath. a 35

A PRACTICAL BEE-KEEPER OFFERS HIS SERVICES, at home or abroad; 12 years' experience (7 in West Indies); moderate wage.—NECTAR, c/o "Bee Journal." a 24

Special Prepaid Advertisements.—*Continued*

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture postcards or for advertising purposes, 2s. 6d., post free.—Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

SWARMS.—Black, 12s. 6d.; Italian, 18s.—THOMAS, Coedmelyn, Stackpole, Pembroke. a 65

FURNISHED APARTMENTS ON A BEE-FARM, pretty Devonshire village. — W. SOUTHCOTT, Gittisham, Honiton.

STRONG HEALTHY SWARMS, 12s. 6d., boxes free; satisfaction guaranteed; can deliver at once.—MULLIS, Egerton, Kent. a 58

METAL ENDS ("W.B.C."), 2s. 4d. gross, post free; sample gross free with 10s. 6d. parcel; 50 Split Sections, 1 lb. Super, 1½ lb. Brood Foundation, and 24 Standard Frames, best quality. — BEE-KEEPERS' STORES, Arcade, Bedford. a 60

33RD YEAR.—Imported Italian Queens, 6s.; British, 4s.; Swarms, Nuclei.—E. WOODHAM, Clavering, Newport, Essex. a 54

STRONG NATURAL SWARMS, 12s. 6d. each, healthy, safe delivery; small Swarms, 1910 Queen, 8s. each. — NORTH, Cressing, Braintree, Essex. a 61

SWARMS FOR SALE WHEN READY, only strong lots sent out. Price 10s. 6d. each.—D. COLE, Cole Green, Hertford. a 62

PRIME NATURAL SWARMS, 15s. to June 15th, 12s. 6d. after; on rail.—SOLE, Stotfold, Beds. a 70

QUEENS.—Brice's Special Hybrids, 5s. 6d.; Blacks, 5s.; Virgins, from 2s. 9d., in speciality introducing cage; safe delivery guaranteed. — BRICE'S APIARIES, Otford, Kent. z 66

HEALTHY JUNE SWARMS, 11s. each, on 10 Frames, 15s.—COOK, Worlington, Soham. z 99

HEALTHY SWARMS, 14s. each, best strain, guaranteed safe arrival; inspection invited Wednesday afternoons.—P. HANSEN, Gardener and Bee Expert, 3, Gladstone-cottages, Norwood Green, Southall. z 98

STOCKS OF BEES, in prime condition, on 8 combs, £1 5s.; Virgin Queens, English Black, in introducing cage, 1s. 6d. For sale, cash with order.—T. D. SINFIELD, 26, Upper George-street, Luton. a 18

NOW READY.—Austin and McAslan's complete List of Hives and General Bee Appliances, post free on application.—89, Mitchell-street, Glasgow. z 80

SECTION GLAZING.—Best quality Lace Paper, made especially for Bee-keepers' use, not common box edging, white, 100 6d., 300 1s. 4d., 500 2s. 3d., 1,000 3s. 9d., post free; blue, green, or pink, 100 7d., 300 1s. 6d., 500 2s. 6d.; Lace Bands, 2⅞ in., 3 in., and 3½ in. wide, white, 100 1s. 2d., 200 2s. 3d., 500 4s.; a few in pink and blue, 100 1s. 4d., 200 2s. 6d.—W. WOODLEY, Beedon, Newbury.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Should Drone-comb be Used in Extracting Frames?—Mr. C. P. Dadant says in *Apiculture Nouvelle* that after a good many years' experience in using drone-comb in supers he has finished by observing that if the honey-flow does not set in suddenly, or if it has an interruption, it often happens that the queen, getting tired of laying in worker-cells, seeks those of drones. At different times he has found combs in shallow frames in supers filled by the queen, and thousands of drones reared. This could not last, for hives which produced such numbers of males could not be profitable. Not only did the queens under such conditions seek out the larger cells to rest from laying fertilised eggs, but the workers realise this desire on the part of the queen by leaving patches of drone-comb unfilled with honey. Mr. Dadant says there is only one remedy for this, and that is the use of excluders, by means of which the queen is kept out of the supers. He says formerly he used to keep all drone-comb for use in supers, but since comb-foundation has come into use he recommends this in preference. As to the assertion that bees prefer to store in drone-comb, it is only true in one sense. Drone-comb is built quicker than worker-comb; therefore bees will construct it in preference if it is a question of simply building for storage of honey, and if the queen has a sufficient number of worker-cells for her immediate requirements. This is the reason why bees always build drone-comb when they are queenless or if the queen has as much room as she requires for the necessary ovipositing.

He also says that worker-comb is much stronger and not so liable to collapse in extracting; therefore he recommends that this should be used in supers in preference to drone-comb.

SURREY B.K.A.

ANNUAL MEETING.

The annual meeting of the Surrey Beekeepers' Association took place at the County Hall, Kingston, on April 30, when Mr. W. Welch, J.P., C.A., of Cranleigh, presided over a good attendance of members from all parts of the county.

The chairman, in moving the adoption of the report and balance-sheet, said that though the report was not quite so rosy as they would have liked it to be, it was quite as good as they could expect, considering the very severe shocks that beekeepers had sustained during the last two or three years. With regard to the general income and expenditure account last year, it showed a small deficit of 2s. 11d., whereas this year it recorded a balance in hand of £8 5s. Mr. Gibbons seconded, and the report and balance-sheet were adopted.

The following were appointed as the executive council for the ensuing year: Messrs. A. Seth-Smith, W. A. Dawson, C. H. J. Evershed, F. S. Fletcher, W. P. Gornall, G. C. Halahan, W. E. Hamlin, A. T. Hedger, J. Kaehler, J. W. Lewis, A. H. Miller, W. F. Reid, W. Sole, A. J. Stevenson, E. Walker, A. Watkin, T. H. E. Watts-Silvester, M.A., M.R.C.S., and F. B. White.

Considerable discussion took place as to an epidemic which has broken out amongst bees in Surrey during the past year or two.

Mr. F. B. White said the mysterious disease which had developed amongst bees in Surrey was undoubtedly a very serious matter, for some people had lost all their stocks and others had lost most of them. Since the outbreak commenced the association's experts had been doing their utmost to deal with it. Their difficulty had been to know exactly what to do, as they were unable thoroughly to understand the disease. He had approached the Board of Agriculture several times during the last eighteen months for the purpose of getting them to investigate the disease, and if possible to issue a leaflet giving instructions as to dealing with it. Up to the present nothing definite had been done. The Board were proceeding with their investigations, however, and in the last letter he had received from them they said they hoped to be in a position to issue a leaflet before the summer. Proceeding, Mr. White said the association had experienced three bad seasons, and gave as two reasons the collection by bees of bad pollen and bad honey, and the fact that all through the last two winters queens had not been breeding, with the result that there had been a difficulty in raising fresh bees. Unless a stock went into the winter with a large proportion of young bees, it was not possible for any stock to thrive. He thought that with a fine summer a great deal of the disease would pass away.

An interesting discussion ensued, Mr. Hedger suggesting that the poisonous substances, such as arsenic and nicotine, which were used for spraying purposes on the sources from which the bees obtained pollen and honey might have had an injurious effect upon the bees.

The discussion shortly afterwards terminated, and votes of thanks to the chairman and Mr. White for his services during the past year concluded the meeting.—F. B. White, Hon. Sec.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of May, 1910, was £6,086.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

SECTIONS.

BY D. M. MACDONALD, BANFF.

Recently I read somewhere a statement implying that if you desire to obtain perfectly-finished work you should use only four-bee-way sections. I do not think so. If I wished to pick a sample lot I would rather go to a pile of two-bee-way sections. I know that I would get them plumper and heavier, and I am as confident I would find them with a higher degree of finish. In the other kind, the chances are nine to ten that most of them would possess more pop-holes, more thinning down at the four corners, and they would possess a greater tendency to irregularity of finish. Some contend that it is an advantage to use the four-bee-way, as they afford freer inter-communication. Theoretically they do, but experience leads me to the conclusion that bees accommodate themselves to circumstances to such an extent that they finish the two-way off as expeditiously as the other. Then, in scraping and handling sections the two-way have undoubted advantages. Fewer fingers are poked into them, fewer corners afford accommodation for propolis, and therefore dressing them takes up much less time. Then when it comes to packing the two-way have an unquestionable advantage. They travel better, and come out of the case on to the dealer's counter in a fresher and more presentable form.

Kept over from former years in a dry place, the wood turns brittle, and sections are apt to snap at the V-cut when folding; but a gentle damping quickly cures that. Those with a split top are the handiest and easiest to fill with foundation. Full sheets should be used in preference to the small triangular pieces sometimes deemed sufficient, or even to the quarter or half sheets believed in by many. Sections come out more uniformly filled, with better finish, and, taken in the gross, they more nearly approximate to the full pound. Some use a filling case, but when hand and eye have received a little training by experience a quicker and neater job is overtaken with less labour when only the section is handled. A gliding motion rests the bottom part on the table, raises each side to stand perpendicularly, and depresses one-half of the split top into the mortise-and-tenon joint. One hand seizes the foundation from a pile lying conveniently near, and places it in position, while the other hand closes the upper part of the split top, and a further pressure of the thumb and forefinger drives it home. While lifting it aside, or placing it in the rack, a slight pressure at the split top, against the inclination of the foundation to lean to one side, brings it to the perpendicular, which position it must continue in if the bees are expected to build the comb neat and true.

All sections worked for other than the home market should have dividers separating each row. Some believe in tin, others in wood, dividers, but I cannot say that it makes a pin-point of difference to the bees which are used. Fences are rather a nuisance, but the no-bee-way section is in small request. At one time wire-woven dividers were advocated by some, but they never caught on to any extent. I believe they lead the bees to the idea that their frailty necessitates brace-combs between them and the honey, and of course faulty sections and bleeding honey would be the result. Racks should not be made up very long before they are required to be placed on the hives. This operation should not, however, be postponed till too late a period, or the bees may get the swarming craze. A week too soon may be better than a day too late for supering likely stocks.

When honey-flowers are becoming plentiful in the fields, with genial weather prevailing, and bees fairly numerous, these supers may be placed in the hive, but no regular date can be named, as each season has a time of its own. The beginner should have his veil securely fixed, his smoke fully charged, and perhaps a friend to assist. Do not use much smoke. The veteran rarely uses any. With the rack firmly grasped in his right hand, he instantaneously throws aside the quilt with his left, swings the rack into position above the frames, and covers its top within almost a second, never giving the bees time to realise that they have been meddled with in any way.

When the first rack is nearly half finished place another on the top, even before the bees have any special need of this receptacle for storing. One of the chief factors in causing swarming is congestion in the hive interior. If one wishes to prevent the bees from swarming, be lavish rather than stinted in the amount of overhead room if the weather is very warm, and a good flow on. Placed above the other rack or racks it is no detriment to the bees, as it would be if placed below, thus causing a dark void in the centre of their surplus chamber. As the honey-flow begins to wane, reduce this overhead chamber by withdrawing all full

supers, and so concentrating the energies of the bees on less super-comb area. There is little fear of swarming by that time, and bees do better work, more of it, and give it a higher finish when the energies of the full force of bees are bent on work within their compass. At this time especially it is injudicious to place a rack of sections below one partly finished. Earlier in the season it matters little where surplus room is placed, as bees are eager and willing to build comb and store honey in any vacant space in the proximity of the brood-nest. Late in the season, however, changed conditions alter the case. Concentrate forces and conserve heat, and thereby avoid finishing off the season with a lot of unsaleable partly-completed sections.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEES PERFORATING FLOWERS.

[7840.] While studying the way British honey-bees work upon certain species of flowers I noticed them a few days ago on *Faba vulgaris*, and I now enclose a truss of bloom for your examination. You will notice a small puncture at the base of the bloom. I examined about 300 plants of this bean, and found quite 95 per cent. of blossoms punctured. I also observed that when bees alighted on the flower they first tried the keel of the bloom, and, failing there, went to the top side of the base, put out their tongues, formed a half-circle, and sucked the nectar, and this they repeated on other blossoms. If you have ever observed them on this plant or on other flowers of similar structure to the bean I should like to know through the B.B.J. I split open the keel of some of the blooms, but the bees took no notice of the open keel, only alighting there as if they wanted to smell the bloom, and when they had scented the nectar ran to the other end and had a drink.—R. V. H., Aberloch.

[It is a well-known fact that bees collect nectar from the bean blossoms either from the mouth of the flower or through perforations in the corolla, which are generally made by humble bees. When nectar is secreted abundantly bees are able to reach it without difficulty, but humble bees have learned that they can save time and get it in larger quantities by making the perforations. Honey-bees, as soon as they find the flowers perforated, give up sucking at the mouths of the flowers and visit exclusively the bitten ones. Darwin noticed this more than fifty years ago, and recorded his observations in the *Gardeners' Chronicle* in 1857. There are a great many flowers that are perforated in the same manner. Amongst them we may mention *Phaseolus multiflorus*, *Lathyrus sylvestris*, *Trifolium pratense*, *Aconitum napellus*, *Symphytum officinale*, *Stachys coccinea*, *Salvia grahami*, *coccinea*, and *glutinosa*, *Gerardia pedicularia*, *Impatiens fulva*, *Tropæolum tricolor*, *Antirrhinum majus*, and *Pentstemon argutus*. Besides these the corolla is frequently perforated in aquilegia, digitalis, linaria, lamium, monarda, nepeta, rhododendron, rhinanthus, glechoma, corydalis, mirabilis, and others. The motive which impels the bees to bite holes through the corolla seems to be the saving of time, for they lose much time in getting in and out of large flowers and forcing their way into closed ones. It has been noticed that bees are able to visit nearly twice as many flowers by alighting on the upper surface of the corolla and sucking through the perforations as by entering the proper way.—Ed.]

YOUNG QUEEN TWICE MATED.

[7841.] I fear I may seem rather remiss in so long deferring my answer to Mr. Crawshaw's question in B.B.J. of November 4, 1909 (page 439), but I know he would forgive me if he knew the reasons for my delay. He asks me to say if the sun was allowed to shine on the baby nucleus-hive that I had in my workshop, and whether the queen was confined to the hive when not under observation.

My answer to the first question is that the sun came round to the front of the workshop about 3 p.m. I then uncovered the little hive, so that the sun shone on the bees. The queen soon showed great excitement, and when I removed the piece of queen-excluding zinc which I kept fixed over the entrance continually (except when I had the hive under observation) she at once rushed out and took wing, as did also the few drones I had put in with the bees; these I remarked took no notice of the young queen, although they flew about close to one another for a short time. Since writing on the above subject I find the same thing was noticed by a well-known Scottish bee-keeper many years ago. I am inclined to think there is a great deal yet to be learned of interest in this matter.

Parthenogenesis.—In a recent issue of the B.B.J. one of the correspondents asks: "Has the last word been said on this subject?" I hope not, as it is one

of extreme interest. Is there no better argument to be advanced in support of it than that we find in the B.B.J. for November 18, 1909 (page 452)? I have read over and over the late Mr. Pratt's article, wondering if I had made some mistake in what I understand him to say. To me it stands thus: He finds a number of young queens he had quite forgotten for fifty or sixty days in good condition, surrounded with young bees, that are feeding them through the gauze cages, and in three cases he finds a "pile of eggs" within the queen-cages. Now, were I seeking to prove that parthenogenesis existed, not only in the so-called lower orders of life but also in the higher, and to prove my point stated that I had shut up a dozen young chickens hatched in an incubator in a pen by themselves, perfectly isolated from all other poultry, and that these twelve chickens were all pullets, and that on a certain day I looked into the fowl-house and found, to my surprise, a "pile of eggs," should I have brought forth a very strong argument in favour of parthenogenesis amongst fowls? Had I set a dozen of those eggs produced by those isolated pullets, and a dozen chickens had hatched out, it would have been quite another thing; and if the writer of this article had got some of his "pile of eggs" hatched, and this done *under certain conditions*, I should at once admit this to be a very strong argument. As the matter stands I fail to see its force. I wish neither to misunderstand nor to misrepresent the writer of this article, and if I have done so I trust that Mr. Crawshaw in "Cappings of Comb" will, in his most gentle and persuasive style, point out where I am mistaken.

In the same article Mr. Pratt refers to young queens that can "hardly be distinguished from workers by the casual observer," &c. Yet those same queens can be fertilised and produce drones and workers. If this be the case, as there is no perceptible difference between them, why cannot a true worker-bee be mated?

April was a most trying month for bees with me, thermometer rarely reaching 50 deg., chiefly ranging from 40 to 45 deg. Fahr., so that bees, when they did fly, did so at the sacrifice often of their lives. On May 1 thermometer rose to 60 deg. in the shade: this was about the first good bee-day since the month of March. I am located in rather a high position. Bees may have fared better with my neighbours, who live in lower and more sheltered localities.—HUMBLE-BEE, Allan Vale.

[Mr. Pratt in his article assumed what has been abundantly proved under similar conditions, and did not require repeating, that such unfertilised eggs could only produce drones. Parthenogenesis does not apply to pullets, as their eggs, which are unfertile, are not capable of reproducing the species, whereas unfertilised queen-bees' eggs produce drones. Mr. Pratt pointed out that there was a difference between young queens and workers which made the former attractive to the drones. Anatomically there is considerable difference, which a naturalist would easily detect, although hardly noticeable by the "casual observer." The difference makes it possible for such a queen to mate, whereas a worker cannot do so.—ED.]

EXTRACTING HONEY IN SPAIN.

[7842.] I was sorry to find on developing the photographs I took during my trip in Southern Spain that they were all failures, owing to a defect in my camera. While I was abroad, however, I got hold of a Spanish bee-book—"Curso Completo de Apicultura," by G. de Layens and G. Bonnier, translated into Spanish by E. de Mercader-Belloch—and find among the illustrations one of a typical Spanish apiary, which exactly resembles all the apiaries I saw. There was also an illustration of a man taking the combs out of the hive for the purpose of extracting the honey, and I also came across the following passage, which I send, as it corroborates the description I gave in my last letter (B.B.J., page 198): "Many owners of fixed hives do not suffocate their bees . . . and practise that which is called 'the pruning of the hives.' To that end they proceed in the following manner: One smokes the hive from underneath, then carries it off to the place where are the necessary utensils. It is placed above the part occupied by the brood, and partly on a table of suitable size. With the help of the smoke the bees are driven underneath the table, leaving in this manner the combs of honey free; one cuts out and extracts these with the help of a knife, and the bees that still remain are driven off. Afterwards, having made the bees under the table return to the hive, the hive is carried back to the original site. This operation ought to be done for preference when there is still honey in the flowers, otherwise there would be danger of robbing." The book does not go on to describe the process of extracting, but as the illustration shows the tub and pail of water all ready, I suppose that the honey is obtained in the manner I have already described. But I should not think that the hot water improved the flavour.

I found on my return home that all my bees had died, except one stock of Sladen's "Golden Prolifics," but they had lost their queen, one of last year's, and were

dwindling rapidly. I think it must have been owing to honey-dew, as the bees went into winter quarters with plenty of food, and hives warmly packed with chaff, according to directions in the "Guide Book." There are still plenty of stores left, but in some of the cells there are some patches of white dust, which look rather like chalk-dust. [Probably hard pollen.—Ed.] The frames and the hives smell quite sweet, and have no disagreeable odour. Several neighbouring bee-keepers have also lost a good many stocks. However, I have ordered some more swarms, and I hope to have better luck this year. One of the blessings of bee-keeping is that, whatever bad luck or misfortune happens, I find from my own experience and that of other people one always begins to make fresh plans and to hope for better luck next time. I think we must partly obtain this feeling from the bees themselves, who, after they have suffered a loss of any kind, immediately begin working harder than ever to put things right.

Foul-brood Legislation.—I have read the discussion about this in the B.B.J. with great interest, and I for one hope the B.B.K.A. will be successful in getting a Bill passed; because I am afraid that it is the unfortunate bee-keepers who, like myself, are only able, through force of circumstances, to visit their apiaries at few and distant times, who are partly responsible for fostering diseases; and one does not wish to keep bees at another bee-keeper's expense, particularly when that bee-keeper may be relying on his bees for a considerable portion of his annual income. If we had this Bill passed, I think it would to a great extent put an end to these possible sources of infection. I suppose that the inspectors will probably be the county experts, with whom we are already familiar, and whose spring examination we always expect. I think the only difference will be that in future the expert, instead of telling us that certain stocks are badly diseased and ought to be done away with, will see that we either do do away with them, or he will destroy them himself. I think that most of us look upon the expert as a friend and do not particularly object to his examining our stocks now, even if we happen to be away from home, and I do not see any reason why we should object to his doing it in future. Also, in the case of people who are away from home for long periods of time, like myself, the experts will put us down on their black list, as people who should be under suspicion, and consequently he will visit us oftener, and prevent the chance of our harbouring diseases. Therefore, looking at it from a selfish point of view, we should be decidedly better off; and, looking at it from other people's point of view, they would be decidedly better off, if an Act was passed, as I hope it will be in the not very distant future.—W. G. Coates, Chelsea.

[The illustrations in MM. Layens and Bonnier's book are copyright, so we cannot reproduce the photographs you kindly sent.—Ed.]

DESTROYING WASPS.

[7843.] I enclose cutting from the *Daily Mail* of June 9, although you may very probably have seen it; but I hope Mr. T. A. Baker (page 227) will not read it, as it might hurt his feelings—J. T., Brayton.

The Marden and District Fruit-Growers' Association, Kent, having offered a penny each for queen wasps, the scholars of the Marden National School have brought upwards of 600 to their headmaster, who is one of a number of persons in the district deputed to receive them and give the reward.

Echoes from the Hives.

I have pleasure in sending a report of how the season promises in this district. In going through cleaning operations in early spring I found the bees had wintered badly on the whole, while every bee-keeper in the village except myself had lost one or two stocks. Luckily, I had kept up a continuous supply of syrup from the beginning of March, and out of fourteen colonies I had only to unite two. March being a fine month for the most part, swarms promised to be early. But April put a stop to this, as we scarcely had a fine day. With May there has been an improvement, and the bees began to build up rapidly, though they are a little behind last year, as they only just about covered ten frames by the end of May. I supered my hives about the fifth day in June, and I find to-day (June 10) that the bees have taken possession. I have two skeps, one of which threw off a fine swarm on June 9. I hived it at night on nine frames of drawn-out empty comb, and one frame of young brood and honey. I put a super on at the same time, and find that they went up into the sections the same night as when hived. If the weather keeps fine I believe we shall get a good deal of honey in this district, and I certainly hope we shall be repaid for the wretched season last year. I only took about 50 lb. per hive as compared with 140 lb. per hive in 1908.—J. E. L., Hunstanton North.

The present bee-season promises to be the best we have had for several

years. Out of nine stocks I have six covering twelve to fourteen brood-frames, and they are all filling supers fast, two stocks crowding two supers, the upper ones being nearly all sealed over. I examined all my stocks yesterday (the 7th inst.), and found in some cases eleven frames packed with brood. These stocks have been given two to four sheets of foundation in lieu of frames of brood to balance the other colonies. The bees have already worked out thirty-two sheets of brood-foundation this season, and in most instances these are now solid slabs of brood. I hope to have three supers on each colony by the time the clover blooms.

The hawthorn is exceptionally full of blossom this spring, and with such fine, warm weather as we are having is yielding nectar copiously.

I have just received two five-frame stocks of bees from Tenbury, which arrived here within twenty-four hours of the time they were despatched. One stock suffered through some ignorant official tying a newspaper over the top of the box to prevent a few bees escaping through the cheese-cloth, and thereby causing the death of nearly half the bees. However, this stock has now six combs of brood. The other stock packed in a box with zinc cover and bottom ventilator had only one dead bee on arrival.

I am extremely pleased with this experiment, as I was afraid it would not be possible to get bees and brood from a distance without mishap. And it may be of interest to other bee-keepers who intend buying stocks, but fear the risks of transit.—J. J. M., Laxey, Isle of Man.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Go Slowly (page 189).—"I have only seven hives, *but* I enjoy my JOURNAL"! The italics are mine. Mr. Gale probably did not intend any kind of converse to be understood as generally true, but it is possible that some sort of belief obtains that happiness increases with possession even of bee-hives. May I assure those enthusiastic beginners this is by no means necessarily the case, but rather the reverse. In the first ecstasy of bee-delight a beginner is apt to outrun his powers. More true enjoyment can be obtained from one or two hives than from a large apiary. There comes a time when the work detracts from the pure pleasure of the amateur and the unalloyed delight of study. There is even a reduction in the record harvests which may be obtained from a few thoroughly-understood and properly-tended hives. So that it is possible to enjoy the subject and its appropriate printed matter without being a large proprietor. This is not alone true of bee-keeping. Rest assured, dear young friend, that far greater happiness lies within your capabilities than without. How many would willingly drop their responsibilities and become again as little children, or the willing servant of some other master mind! Hence, if you can find your happiness in little things, why scorch it out of existence by adding another to the many futile attempts to set the "temse" on fire? So I would once more commend to your consideration that excellent counsel to "go slowly."

Bees in Southern Spain (page 198).—There seems to be a great discrepancy in the price of honey as stated here. From 3d. or 4d. per lb. to 1s. 6d. The first-named price would seem to be about right, judging from the consistency of the honey! And its state would seem to be justified, if the method of extracting be correctly reported. It is, however, almost inconceivable that the honey is diluted with hot water as described, and it is probable that the correspondent has misunderstood the description of process. Probably the vessel containing the honey is placed in hot water for the separation of honey and wax, or the description may simply have referred to the process of wax-rendering.

Bee-keeping in the West Indies (page 209).—The education of Staff-Sergeant Spencer has been, whilst a trifle irregular, such as to make, no doubt, a very practical bee-man of him. I think we should find the tale of the transfer to a regulation hive, viâ the milk-box and the kerosene-box, most interesting reading.

Shackleton at the Antipodes (page 211).—Would it not be better and simpler to kill the ants outright than to affix these iron cups to their legs? Or if the advice is based on the humanitarian principle of "live and let live," and the insects must be held by the leg, would it not be easier to waylay their feet with birdlime or fly-papers?

Winter Losses (page 215).—"D. M. M." has only too fairly summed up my spring count. A number of empties and a few weaklings, amongst the strong. Empties due to storms, mice, and starvation, I am ashamed to confess. I imagined all were packed up with provisions to last until March (and left them with a peaceful mind), but events disproved this. I make penitential confession, as I believe there is a tendency in others also to provide the minimum of stores, or to rely upon experience and probability of a mild winter. But about the weaklings. One forced itself upon my notice by swarming out to a man! Queenless, broodless, and foodless, they returned in ten minutes to

face the inevitable end bravely. But brood and honey were forthcoming, and when later it was found that they had reared a queen (and a very decent-looking queen too!), a further search was made for a fertile mother. This was found in a skep which had used all its stores for the young generation, and where every bee seemed dead after the keen night frost. However, the moribund queen was found, warmed, revived, and fed, and up to the present all parties to the new arrangement seem perfectly satisfied. The weaklings are doing very well by themselves, and will be ready for the clover, whilst the strong have nearly filled a super apiece in this, the best spring I have experienced since I began to keep bees. Pass the wood, please!

Treatment of Parent Hive (page 216).—I see no reason for the usual rush to examine hives after the issue of a prime swarm. If scrutiny takes place in three or four days, the indications will be much clearer, and the cells required for nuclei will be that much riper and better able to stand interference. And if the hive be already known, there is every reason to postpone the operation.

Bee-Shows to Come.

June 21 to 25, at Liverpool (Royal Agricultural Society's Show).—Bee and Honey Section under the management of the B B.K.A.

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A.

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close June 25.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Four Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The Band of the Royal Artillery has been specially engaged. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close July 5.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

Queries and Replies.

[4017.] *A Beginner's Queries.*—A reply in B.B.J. to the following queries will oblige: 1. What kind of a reputation has Worsley (eight miles from Manchester) for bee-keeping? 2. What is the reason of honey fermenting? 3. Will uncapped honey ferment whatever precautions are taken? 4. In extracting honey, ought I to extract twice—viz., first the uncapped honey and, second, the capped? Should these honeys be kept separate? 5. In clearing a super immediately above brood-frames, should the queen-excluder be removed before placing the super-clearer on? 6. How long should honey be kept in the ripener before being bottled? Thanking you in anticipation.—BEGINNER, Eccles.

REPLY.—1. Fairly good, we believe, but the secretary of the Lancs B.K.A. will be better able to inform you. 2. An excessive amount of moisture. 3. Not always. Generally speaking, honey is not sealed over until ripe, but there are occasions when even ripe honey is not sealed over—for instance, when gathered late in the season. 4. Yes, it is advisable. 5. No. 6. For about a week or ten days.

Notices to Correspondents.

G. J. H. (Paleham).—*Securing the Greatest Amount of Section-honey.*—1. It is better to prevent swarming, if possible, by giving racks of sections in good time. You can work three tiers, one above the other, and as fast as the top sections are completed remove them and place an empty rack below the other two. 2. Should the colony persist in swarming, hive the swarm and put it on the stand of the parent stock, put on excluder and supers, then take out the frames of brood and brush off all the bees at the entrance of the new hive, and give the brood to some other hive to hatch out. In this way you will have all the bees in the new hive, and work will go on in the supers with little interruption, while swarming will be checked.

Lex (Gargunnock).—*Making Artificial Swarm.*—1. When making artificial swarms, the bees are distributed in such a way as to equalise the swarm and stock, as explained in "Guide Book." It is not advisable to make a second swarm, although you may do so if your object is to increase. There need be no queen-cells when you make your first swarm, but removing the queen with the driven bees will cause queen-cells to be constructed. If you have no queen that you can introduce to the queenless part you will have to allow one of the queen-cells that the bees rear to hatch, and remove the others. In this case you select the best and most forward cell. A good ripe queen-cell should be of good shape, large, and the wax thinned down by the bees, and should show small pits or depressions on it. Eight or nine days after the swarm is made is the proper time to remove queen-cells. The remaining cell will hatch in about twelve to fifteen days from the time the queen was removed. 2. With properly-wired frames and suitable hives there is no difficulty in transporting frame-hives to the heather. Many thousands of such hives are regularly transported every year. 3. We thank you for your appreciation of the B.B.J. and are pleased you find it so useful.

E. R. H. H. (Barnard Castle).—*Selling Sections.*—1. The 1 lb. sections would be worth 9d. to 1s. each retail, and the price would depend on the supply and demand. 2. It would be better to get a local sale for them if possible, as there would be a saving in cost of carriage. 3. We cannot recommend any firms, but if you will advertise in the B.B.J. you would no doubt find a customer, and in dealing with strangers we would advise in every case that you should adopt the deposit system. 4. During the season bee-shows to come are announced in the B.B.J. every week, and you should apply to the secretaries, whose names you will find, for particulars and entrance forms. The entries for the Royal Show closed on May 31. 5. The proper time to make an artificial swarm is in the spring, so that the bees may have time to fill their hives with a strong population before winter. As you are not anxious to divide your stock you had better prevent swarming, as with such weather as we are having a swarm would have to be fed.

J. P. (Barnstaple).—*Shallow-frame Supers on Section-racks.*—There will be no need to put excluder between the racks and supers placed above if the sections are forward enough.

S. E. R. (Ottery St. Mary).—*Ownership of Swarm.*—If the swarm was seen to issue from your hive and to settle in that of your neighbour, it still remained your property, and (according to Blackstone) the bees can be followed and claimed, but you would be liable for any damage you caused by trespass. If the neighbour's hive was empty and was used as a decoy you could reasonably claim your swarm. If, however, the hive was already occupied and your swarm joined the established stock you would have no redress, as the bees would be so mixed up that the two lots could not be separated.

D. L. J. (Cavendish).—*Refining Wax.*—Melt the wax in water at a low temperature, and the more frequent the meltings the cleaner the wax will become, the colour separating along with the impurities. You can add 1½ oz. of sulphuric acid to every gallon of water when the wax is melted, and use a tinned copper vessel. The mass must be constantly stirred with a stick in order that the wax may be thoroughly blended with the water. Cool off very slowly, and some of the impurities will go to the bottom of the cake, the remainder being precipitated to the bottom. When the wax is cold the impure portion of the under side can be scraped off, after which the cake can be melted again.

Dulwich (Dulwich Village). — *Queen Thrown Out.*—The bee you send is an unfertilised queen.

F. A. (Crawley).—*Dying Bees.*—Your bees are evidently suffering from virulent dysentery similar to the Isle of Wight disease. We would advise destruction of badly-affected stocks and disinfection of hives and ground surrounding, as the disease is very contagious. In the other hives encourage comb-building. From your description of the tarry appearance of the inside of hives there is no

doubt that your bees died from virulent dysentery. There is no known remedy for this, so that isolation would not help.

St. M. (St. Mawes).—*Cane and Beet Sugar.*—1. You must take your dealer's word for it being cane sugar, as it is impossible to tell from the sample sent without a chemical analysis. We should prefer that guaranteed as cane for bee-food. 2. You need not block up the entrance to space outside the dummy as the bees will only utilise main portion of hive. As soon as they are strong enough to need more room and crowd over, move the dummy and add frames. 3. Swarms are best fed slowly by using a bottle-feeder, allowing the bees to take the syrup through one hole only. 4. Specimen copy of *Record* sent as desired.

H. A. H. (Eye, Suffolk).—*Spare Queens.*—No doubt a great many readers would be glad to have virgin queens free of cost, but if we inserted your kind offer you would be overwhelmed with applications, only a few of which you would be able to fulfil.

Anxious (Olton). — *Comb-foundation.*—You can only tell with certainty if it is genuine by having it analysed. The sample is a very fair one at the price, and may be pure, although of inferior beeswax. You will find a number of tests given on pages 95 to 97 of "Wax-craft," where the question of adulteration of beeswax is fully dealt with.

F. V. W. (Gloucester).—*Brood in Supers.*—As you have found brood in every stage as well as eggs in top shallow super a week after putting on excluder, it is possible that the queen has found some means of getting through, or there may be a second queen laying. Some queens are small enough to get through the perforations. Bees do not usually tolerate a laying worker in the presence of a fertile queen, and if it were a worker that was laying, the brood would be readily recognised by its being scattered and not compact. Brood over a week old might have been produced before you put in the excluder, and there is also the possibility of bees transporting eggs, although this is of rare occurrence.

Abbotswood (Cinderford).—*Storifying for Surplus.*—We do not see why the plan you propose should not succeed provided you only allow one queen-cell in lower chamber to mature.

E. D. (Great Yarmouth).—*Instruction in Bee-keeping.*—We do not know of any place near Yarmouth where bee-keeping is taught. You might write to the Horticultural College, Swanley, or the School of Bee-keeping, Messrs. Herrod and Stewart, The Apiary, Luton, Beds. At both these places instruction in bee-keeping is given.

M. S. (Lympstone).—*Clay Cells in Hive.*—Evidently a mason-bee had taken up its residence in your hive. It could not do your stock any harm.

R. V. B. B. (Gloucester).—*Dark Honey.*—The bad colour is due to the quantity of honey-dew it contains.

S. C. S. (Shaftesbury).—The "yellow substance" is merely fresh pollen. Evidently the bees had gathered more than they had room for in the cells.

D. J. T. (Ireland).—*Name of Bees.*—The large bee is the common honey-bee, and the smaller one is a wild bee of the genus *Andrena.*

Suspected Combs.

Mel-Aug. (Enfield).—Comb is affected with foul brood. We can understand your difficulty in keeping your bees healthy as neighbours are so often culpably careless in dealing with infected stocks, and it is because of this that legislation is advocated by so many bee-keepers.

H. H. (Shrewsbury).—Sample of comb is affected with foul brood.

W. D. (Notts).—Comb is infected with a form of sour brood.

Gouk (Gordon, N.B.).—The stock has evidently died from foul brood, and the hive should be attended to without delay.

L. E. S. (Ketton).—The comb is affected with foul brood. We do not make any charge for replying to queries.

Ratœ (Leicester).—The brood is merely chilled; there is no disease.

Special Prepaid Advertisements.—*Continued.*

2 NEW SUPERIOR "W.B.C." HIVES, 10s. 6d. each; large Bee-shed, 40s.—Bigg House, Arnold, Notts. a 72

BEE-APPLIANCES, including modern Frame Hives, good condition.—PARSONS, Manor View, Rusthall, Tunbridge Wells. a 87

WANTED, twelve 4-lb. Swarms, early, 2s. 6d. lb. given to June 29.—NICHOLSON, Langwathby. a 77

SALE, remainder gentleman's Apiary.—Hives from 7s.; Box Shallow Frames, 5s.; other appliances; also few Swarms and Stocks.—HILLS, Alton, Hants. a 79

BARGAIN.—5 Secondhand Hives, fitted worked-out Brood Frames, all ready for Swarms. Stamps for particulars.—ANGUS, Dock View-road, Barry. a 81

2 FERTILE 1910 QUEENS, 3s. 6d. each.—F. WILSON, 30, Burry-road, St. Leonards. a 82

FOR SALE, 10 Hives, in flat, with Standard Super, sloping roof, all one pattern, Queen Excluder, rubberoid for roof, 10s. each; also Standard Frames, in flat, 5s. per 100; a few lb. of 7-sheet Brood Foundation, at 2s. 2d., post paid; all new.—R. HOLMAN, Southwood House, Irnham, Grantham. a 94

2 STRONG HEALTHY STOCKS, in Standard Hives, with one empty Hive, four Section Crates, two Excluders, four Feeders, Smoker, pair Birkett Gloves. The lot £3 15s.—NELMES, Cathcart. a 83

BEE-TENT WANTED, new or secondhand. — Apply, with full particulars, to SECRETARY, S.B.K.A., Gippeswyk Hall, Ipswich. a 85

BEES FOR SALE.—3 good large Bar-framed Hives of Italian Bees, strong and true.—HOMEWOOD, Chartham, Canterbury, Kent. a 75

HONEY RIPENER, 34 by 13, equal to new. Price 7s. 6d.—ADAMS, Dunton, Biggleswade. a 93

WANTED AT ONCE, three strong Swarms, in non-returnable boxes or skeps. Deposit.—S. DAVID PAUL, Castletown, Isle of Man. a 95

HONEY, granulated, good flavour, rather dark, in 28-lb. tins, 6d. per lb. Sample, 2d.—C. FIELDER, North Mimms, Hatfield. a 96

12 DOZEN HOUDAN-BUFF ORPINGTON CHICKS, 3 to 7 days old, Cooks' direct strain, 5s. dozen; reduction for the lot; and 3 dozen carriage paid.—MASON, Moorend, Yardley Gobion, Stony Stratford. a 40

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

A DOZEN RACKS OF TEN DRAWN-OUT SHALLOW FRAMES, or eight, 2 in. ends, 5s. 6d. each; also few Drawn-out Standard Frames, two Extractors, Ripeners, and used Section Racks, 9d. each.—HEWETT, Alton, Hants. a 50

LOT APPLIANCES, Hives, Drawn Combs.—MONTE FRANCIS, 32, Regent-road, Great Yarmouth. a 47

4 NEW "W.B.C." HIVES, complete, 14s. 6d. each.—J. BOWDEN, Broomhill, Witley, Surrey. a 37

SELLING OFF.—Empty Hives, cheap, good condition, 5s., 7s. 6d., 10s.—Write particulars, G. H. HICK, Wayfield, Bathcaston, Bath. a 35

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture postcards or for advertising purposes, 2s. 6d., post free. Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

Special Prepaid Advertisements.—*Continued.*

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

GUARANTEED HEALTHY.—Swarms (natural), from 30 Stocks, 4-frame Nuclei, with fertile Queen, 14s. 6d.; Virgin Queens, 2s. 6d.; all from noted Cheshire Apiary.—MERE FARM APIARY, Nether Alderley, Chelford. a 91

VIRGIN QUEENS, 1s. 6d., safe arrival, introducing cages.—TOLLINGTON, Woodbine Apiary, Hathern, Leicestershire. a 73

3-FRAME NUCLEI, Queen, Bees, Brood, and Stores, 12s. 6d.; Stocks of Bees, on 10-frames, 30s.—C. TOWNSEND, Lawnfield, Maidenhead. a 90

STRONG NATURAL SWARMS, healthy, 12s. 6d. —DENNIS, Brownsover, Rugby. a 86

A STOCK FOR 8s.—I send post free in special box 1 quart of Bees (enough to build up into strong stock for winter), with carefully-reared imported young fertile Italian Queen, and book with full instructions, guaranteed healthy.—HILLMAN, Stonehouse, Glos. a 74

ILFRACOMBE (DEVONSHIRE).—Florence Villa, board-residence, splendid position, close sea; moderate.—RICHARDS. a 76

GOOD SWARMS, 11s. 6d.; boxes, 2s. each, or return; Fertile Queens, 3s. 6d.; Virgins, 1s. 9d. —BAILEY, Swan-lane, Evesham. a 80

STRONG NATURAL SWARMS, guaranteed healthy, 12s. 6d., packed, safe delivery.—CADMAN, Codsall Wood. a 84

QUEENS, Doolittle strain, Virgins, 1s. 6d., now ready; Fertiles, 5s. Book now for delivery in time. Letters of appreciation of their good qualities and repeat orders coming in daily. Don't leave it till too late.—D. G. TAYLOR, Ilminster. a 88

WANTED, Swarms. Queens for sale, 2s.— KEATLEY, Gate-lane, Wylde Green, Birmingham. a 97

FURNISHED APARTMENTS ON A BEE-FARM, pretty Devonshire village. — W. SOUTHCOTT, Gittisham, Honiton.

33RD YEAR.—Imported Italian Queens, 6s.; British, 4s.; Swarms, Nuclei.—E. WOODHAM, Clavering, Newport, Essex. a 54

HEALTHY SWARMS, 14s. each, best strain, guaranteed safe arrival; inspection invited Wednesday afternoons.—P. HANSEN, Gardener and Bee Expert, 3, Gladstone-cottages, Norwood Green, Southall. z 98

SECTION GLAZING.—Best quality Lace Paper, made especially for Bee-keepers' use, not common box edging, white, 100 6d., 300 1s. 4d., 500 2s. 3d., 1,000 3s. 9d., post free; blue, green, or pink, 100 7d., 300 1s. 6d., 500 2s. 6d.; Lace Bands, 2⅞ in., 3 in., and 3½ in. wide, white, 100 1s. 2d., 200 2s. 3d., 500 4s.; a few in pink and blue, 100 1s. 4d., 200 2s. 6d.—W. WOODLEY, Beedon, Newbury.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. Terms: Tea, bed, and breakfast, 3s. 6d.; or full board, 5s. per day.—HORSLEY'S, Merridale House, top of Castle Drive, Douglas, Isle of Man.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, June 16, at 11, Chandos Street, Cavendish Square, when Mr. W. F. Reid presided. There were also present Miss Gayton, Miss K. M. Hall, Messrs. C. L. M. Eales, J. B. Lamb, O. R. Frankenstein, A. Richards, G. H. Skevington, and W. Herrod (Secretary).

Letters expressing regret at inability to attend were received from Mr. T. W. Cowan, Mr. H. Jonas, Miss E. Scott-Walker, Mr. R. H. Coltman, Captain Sitwell, and Mr. R. T. Andrews.

The minutes of Council meeting held May 18 were read and confirmed.

The following new members were elected: Mr. A. J. Blakeman, Ashleigh, Peel Avenue, Bowdon; Mr. W. J. Goldsworthy, 113, Friern Road, East Dulwich, S.E.; Miss L. Hughes-Jones, Thatcham Fruit and Flower Farm, Newbury; Mr. A. H. Margetson, Woodthorpe Avenue, Sherwood, Notts; Mr. W. Ball, 30, Welbeck Road, Walkley, Sheffield; Mr. J. A. Haigh, Westfield, Coatham, Redcar; Mr. C. N. White, Union House, St. Neots; Mr. W. B. Tallent, Broomhall Street, Sheffield; Mr. E. A. Forster, Acton Villa, Shrewsbury Lane, Woolwich; Mr. J. Cooper, 45, Bunyan Road, Hitchin; Mr. W. A. Simkins, Harsnetts, Chigwell, Essex; Mr. E. Aldridge, 30, High Street, Uxbridge; Mr. S. G. S. Leigh, The Nurseries, Broughton, Hants; Mr. B. Alexander, 135, Tressillian Road, Brockley, S.E.; Mr. A. D. Tobler, Willaston School, Nantwich, Cheshire.

The report of the Finance Committee was presented by Mr. Lamb, and it was resolved that payments be made amounting to £23 15s. The receipts for the month amounted to £41 8s. 11d., and payments to £51 2s. 11d., leaving a balance in hand of £188 11s. 5d.

The recommendations of the committee were accepted. The report of examination for first-class certificates was received, and it was resolved to call upon those who had passed the paper test to come up for the lecture test at the next Council meeting.

Mr. Lamb moved, and Mr. Skevington seconded, and it was carried: "That, in view of the information contained in a letter from Mr. E. D. Till of February 18, 1910, and in a letter from Mr. J. H. Haviland of March 25, 1910, the Apis Dorsata Fund of £20 be transferred to the general funds of the Association, and that the two letters referred to be copied upon the minutes of the Council."

Examinations for third-class certificates were arranged at the following centres: Ely, Worcester, Derby, Swanley, Budleigh Salterton, Lancaster, Thatcham, and Carlisle. The judge appointed by the Worcestershire B.K.A. at Madresfield was also approved.

An application from the Gloucestershire B.K.A. for affiliation was accepted.

The next meeting of the Council will be Thursday, July 21.

FOURTH INTERNATIONAL BEE-CONGRESS.

The fourth International Bee-Congress is to be held in Brussels in the Palais des Fêtes on September 25 and 26 next, and is under the patronage of the Belgian Government.

The subscription for members wishing to participate at the meetings is 5 francs. Members are entitled to free admission to the exhibition during the session of the Congress.

Members wishing to submit questions for discussion at the Congress should make application before July 1 to M. Leon Tombu, Rue de la Motte, Huy (Liege). Subscriptions to be sent to the secretary of the Organisation Committee, M. Louis Geneneeaux, 8, Rue Gregoire-Bodart, Huy (Liege).

BEE-KEEPING IN NEW ZEALAND.

A number of Otaki bee-keepers have just been fined by a magistrate, under the terms of the New Zealand Foul Brood Act, for refusing to adopt the frame-hive. These are the first cases of the kind in any land, and have a deep significance to bee-keepers all the world over. Foul brood is, of course, the bane of the bee-keeping industry, and it appears that this compulsory method is the sole way of securing that those engaged in the industry will obtain hives that are so constructed that the first symptom of the disease may be detected. The Act has already proved that control of this disease is converting a precarious business in the hands of the majority into a permanently successful one.—*Standard of Empire*, May 27.

NEW B.K.A. AT EASTWOOD, ESSEX.

A bee-keepers' society has been started in Eastwood to band together all those who take part in this most fascinating craft. At the kind invitation of the Rev. and Mrs. T. R. Edwards, a meeting was held on Monday, the 6th inst., at their residence, White House, Eastwood, when there was a good and enthusiastic attendance. Mr. Edwards explained that there was a feeling prevalent that a local association would be helpful to the bee-keepers in Eastwood, and might encourage

the spread of the industry in the neighbourhood. Mr. Edwards consented to accept the position of president, and the following officers were also elected: Secretary-treasurer, Miss Kettelwell; committee, Mr. and Mrs. Boyle, Mrs. Edwards, Mr. Easlea and Mr. Hicks. It was decided that the meetings should be held monthly from March until October at different members' houses.

All intending members are invited to send their names to the secretary, Miss Kettelwell, 2, Pleasant Villas, Eastwood Road, viâ Rochford.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A FOUL-BROOD EXPERIENCE.

[7844.] This is my third year as a bee-keeper, and I now have ten stocks. About a week ago, when making an examination of the hives, I discovered that one was badly affected with foul-brood. My first instinct was to destroy bees, combs, and quilts; but, on thinking the matter over, I decided to call in the expert for the district to which I belong, and act upon his advice. He accordingly came, and on opening the affected hive said that the combs and quilts must be destroyed, but that the bees were worth saving.

He then moved the hive off its stand, and shook the bees in front of a skep placed on the stand recently occupied by the hive. Then as the bees were commencing to run up into the skep he picked out the queen and killed her. He left shortly afterwards, telling me to fasten the bees into the skep when they were all clustered. I then left the apiary, and busied myself with scrubbing the affected hive with No. 5 carbolic acid, mixed in equal parts with water. I was to shake the bees into the disinfected hive after forty-eight hours, having previously placed a frame containing eggs in the hive, to enable the bees to raise a queen. But on returning to the skep I found that there was not a bee within it, and from the agitated condition of the neighbouring hives I gathered that the bees from the affected hives had dispersed themselves among the two or three healthy neighbouring hives. (One of these is an artificial swarm which I made three days ago, giving the bees eight combs of brood, one of which contained a queen-cell sealed over and one unsealed. The bees in this artificial swarm appear to be strong and are working well.)

This state of affairs caused me much sad reflection. A swarm of foul-broody bees probably seeking entrance at all my strong, healthy, supered hives, and gaining it, too, for they had mostly disappeared and there was scarcely a bee to be seen on or about the old stand.

I came to the conclusion that the expert (third class) had made a great mistake in killing the queen, as if she had been allowed to go up into the skep the bees would have followed her, and I could have picked her out on shaking the bees into the disinfected hive. I also considered that my first instinct—which was to destroy everything—was the right one.

Is there anything that can be done to prevent this pest getting hold of all the healthy hives? Does it necessarily follow that the bees from the affected hive will carry the disease with them into the hives which they have so unfortunately entered?

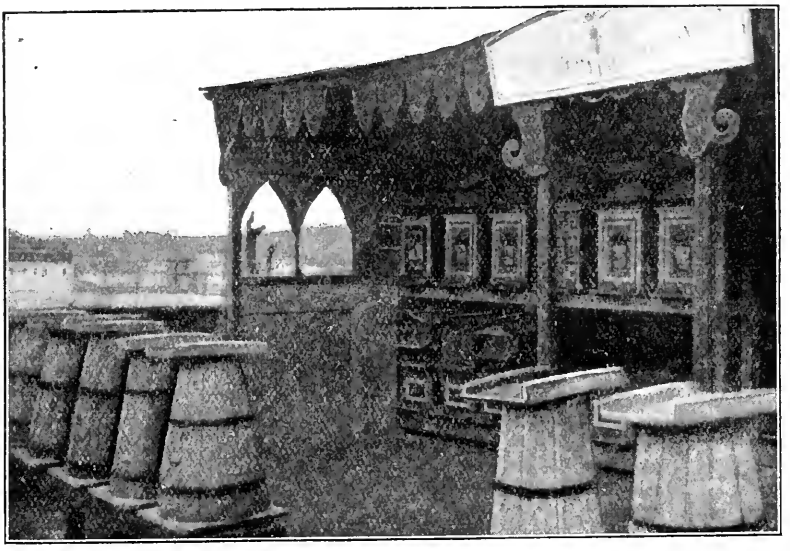
I am extremely grateful to you for all the advice which I am gathering in week by week from the B.B.J., although this is the first time that I have ventured to ask any questions.—Country Parson.

[The mistake was in killing the queen, because the bees would not remain in an empty skep without her, unless shut in as soon as they had got into the hive and before they had realised their loss. Although it is possible, it does not necessarily follow that the bees will carry the infection, because most of the bees may consume the honey they carry away with them, and it is only if this is stored and used for feeding larvæ that it becomes dangerous. It is to be hoped that with the abundant honey-flow at the present time little harm may be done; but we would keep a strict watch on the hives, and when you remove the supers thoroughly examine the brood-combs to ascertain how far they have escaped infection. —Ed.]

AMONG THE BEES IN ITALY.

[7845.] This spring my wife and I made a journey via Patras, Palermo, and Naples to Rome, partly by sea until we reached Naples, and then home by rail via Florence, Parma, Milan, and Venice. During our trip we had the pleasure of inspecting two interesting apiaries. The first one, in Rome, was the apiary of the director of the Royal Italian Observatory of Apiculture, in Viccolo Brunetti, No. 16, within the Roman walls. The house is six stories high, and, a little out of breath, we rang the bell at the Cavaliere Antonio Costantini's abode, and were received in the most friendly way. We first inspected the part of his dwell-

ing reserved for apiculture, where all sorts of implements, necessary and unnecessary, for bee-keeping were to be seen, as well as full and empty combs, mostly in Italian standard frames, and extracted honey in big tins. We tasted the honey, and discussed various points on our hobby with Cav. Costantini, who next showed us up to the house roof. Here we were much surprised to find some sheds and about sixty hives of bees, part of which were frame-hives, with pictures and glass-covered observatory-holes at various parts, which when uncovered allowed us to see the bees working. I remember in the year 1872 seeing something of the same kind at the Crystal Palace Exhibition in London, but this was called an "Abbott" hive. Cav. Costantini explained to us that he made



APIARY ON A HOUSE-ROOF IN ROME.

these hives with the object of showing the wonders of bee-life to his visitors, and he was satisfied that through the interest aroused he had gained a number of recruits to the craft. I enclose a photo of one of the sheds. In the middle of the roof is a large white board, with a queen-bee painted in black in the centre, under a royal crown, and below is the inscription, "Il mio non sol, ma l'altrui ben procuro," which is the device of the "Italian Central Association of Promoters of Bee-keeping in Italy," and means nearly the same as the device of the U.S. Bee-keepers' Union—"Our toil sweetens others." The hives are put up in double rows, and are worked partly from the top and partly from the rear. Cav. Costantini prevents swarming as much as he can, but sometimes a swarm issues and settles down below on a tree in a garden of an old monastery, now called "convito," as the monasteries are abolished in Italy. The monks called by another name ("to smell as sweet?") gather together in one household in a convito, and so the law is fulfilled "at majorem dei gloriam."

Besides his show-hives—which, however, give him a surplus of honey up to 40 kilogrammes (about 90 lb. each), proving the excellent fertility of the country—he has always a large number of peasant hives. These are a kind of barrel with iron hoops, narrow at the top, widening to the base. These stocks are kept to supply the colonies for his clients, and a stock on six frames in a well-ventilated forwarding-box, with a good queen and a fair number of workers, can be safely sent anywhere, even to Russia.

Cav. Costantini supplies nearly all the Roman hotels with honey, and seems to succeed very well with his business. Besides this apiary on the roof of the house, he has another one about five miles from the town in the "agro romano," containing over sixty colonies in various kinds of frame and peasant hives.

From Rome we went to Perugia, and thence to Caralina, where an old monastery had been changed into a practical rural school. The students of agriculture undergo three years' theoretical study at the university, and then one year on the "Rocca" di Casalina as practical farmers. There they learn on a large scale the working of a whole estate having sixty "poderi" (peasantries)—

say, farms—worked by coloni (peasants) on half part of the production.

We had occasion to admire fine white cattle, the renovated Humbrian Longhorns. The bulls and cows are tall but elegant. The calves are of a brownish-pink colour, and get white when they are about one year old It is not a race of albinos, but a fixed white, fine race, and said to be good field workers, producing milk abundantly and being good in flesh. Besides the cattle there were large Yorkshire pigs, fine sheep, large quantities of turkeys, geese, and some very fine Leghorn poultry, and last, but not least, peasant hives fixed above the doors of the houses (cottages). In the "Rocca" itself large cellars are filled with the wine produce of the sixty "poderi" (farms), and all implements prove the rational treatment of the wine, beginning from the blooming vine to the mature bottled drink. Also the olive is cured on a large scale, and a very fine quality of oil finally produced by modern machinery. We had occasion to taste both wine and oil, and found them of excellent quality. Wheat, oats, and barley are grown, as well as maize, mostly for home consumption. There are plantations of young trees of various growths, and naturally there is a fine yard for the purpose of studying the culture of the Golden Italian bee (see illustration on opposite page).

The hives are mostly on the American plan, standing in long rows on a sloping hill, so that every hive has its free outlook. Most of the hives are "Dadant-Blatt," but I saw also "Layens Garafoli," and in a special shed there were some "Sartori," "Dzierzon," and "Fumagalli" hives, to satisfy all tastes.

In a special little building I observed large deposits of combs and frames, and large-size extractors such as I had not seen since my visit to Temesvar, in Hungary. A special desk is prepared with a diary sheet, on which every day's work, observations, &c., have to be noted, and books are kept regularly to show the financial results of each branch of agriculture taught in the school. In fact, so far as we could see, the whole agricultural institution is arranged so as to do no end of good towards the progress of agriculture in general and to all its branches in particular. The students are mostly recruited from among the sons of landowners, who can apply the knowledge they gain there to the working of the fields and stables of their parents. We were exceedingly pleased with all we saw, and especially with the kindly welcome we received in the absence of the director, to whom we were recommended, by a young student of Perugia, Signor Alessandro Morettini, who by chance had returned to the "Rocca" before the end of the Easter vacation. Certainly that land where milk and honey flow ought to be a happy one, and our hearty wishes are to that effect.—ALEX. SCHRÖDER, Trieste.

WINTERING STOCK WITH EMPTY SUPER IN POSITION.

[7846.] Letters have appeared in the B.B.J. from time to time advocating the above system of wintering on the grounds that it gave a larger honey-harvest, but "the why and the wherefore" of this was not, I think, fully stated. Having tried the system these last two winters, I now send you the conclusions I have drawn from my experiences, if you think them worthy of publication.

Compared with the orthodox plan, the main advantage derived from the super system is that it produces hardier and more robust stocks, and consequently there is no spring dwindling. Other advantages such as larger honey "takes" are, of course, incidental to this. Given ample stores, stocks with the supers are more advanced, and the system seems to be specially adapted to early districts.

Against the foregoing must be set the important drawback of a largely-increased food consumption. Ten frames of food will only carry a strong stock to the end of March, after which time it is a question of feeding, with its attendant trouble and expense. There is also a great risk of starvation in the early spring.—W. H. W., Harlington.

CURIOUS HIDING-PLACE OF A QUEEN.

[7847.] On May 20 last I united a queenless stock of bees to a prosperous colony, its next-door neighbour. I tried to find the queen that headed this prosperous stock, but failed, so went on with operations, hoping they would turn out all right. After successfully uniting both lots and leaving them, I felt I had a bee inside my shirt. On going upstairs to remove the intruder, my wife found it was the queen which we had failed to discover in the hive. I presume she had run up my sleeve during the operations. We opened the hive and popped her on the frames, and she was down amongst the bees in an instant, apparently none the worse for her adventure.

I have five strong stocks, all working in the supers and doing well so far. It is grand bee-weather here, but we want a shower of rain badly, as all the thunder showers which fell in other places have missed us. I had one swarm ten days since, but unfortunately the queen was lost. I gave them a frame of brood out of another hive, and they have drawn

three queen-cells out, so with good luck they will soon be all right.—C. M., Lincoln.

THREE QUEENS WITH A SWARM.

[7848.] I had a swarm from one of my hives a few days ago, and on casting them on a sheet before the hive soon picked out the queen, then to my astonishment I saw and captured another queen, and, more wonderful still, after this a third. I have had swarms which united together in which two queens were present before, but have never heard of three queens accompanying a swarm from one hive. Another curious feature of this swarm was the way they balled the drones. All over the sheet were knots of bees, in the centre of each of which was one or more drones. I am pleased to see that the discussion on fertile hybrid queen, and two frames of brood and 4 lb. of driven bees with queen, I made two more stocks. The original stock I left with two frames of brood and four drawn-out combs for the flying bees, and I took care to feed liberally for the winter. This spring the "Goldens" only covered four frames in April; the other two stocks six each. They are all now covering eleven frames, and there is a rack of supers on each, the "Goldens" working well in a rack of drawn-out combs, the other two stocks each just beginning to draw out a rack of sections. I naturally cannot expect big "takes" of first-class honey, as I am situated in the town at the corner of two main roads. We are having fine swarm weather, and, except for the lack of a few showers of rain, I should say it is perfect for the bees. Wishing your readers a record

THE STUDENTS' APIARY AT AN AGRICULTURAL COLLEGE IN CARALINA, ITALY.

foul brood is to be stopped for a while. We have had too much of it of late in your columns. Cannot we leave the foul brood business until the "winter of our discontent"?—RECTOR, Suffolk.

Echoes from the Hives.

I started my career with bees in the autumn of 1908 with a driven lot, which unfortunately succumbed during the winter, but I determined to make another start in the spring, 1909. Accordingly, early in April of that year I purchased a six-framed colony of Sladen's "Golden Prolifics," and from this one stock I took 33 lb. of honey and two racks of built-out combs. I divided the stock, which covered eleven frames, after the honey-flow, and from the seven frames of brood and a young honey-season to make up for the poor one last year.—W. H. F., Leicester.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Big Deal.—From the *American Bee Journal* we learn that the National Biscuit Company annually purchases 125 carloads of honey. As each car carries from thirteen to fifteen tons, that would mean about 3,600,000 lb. of honey. Every consignment is tested for purity by the company's chemist, and it is gratifying to find his labours are light. They will not use any adulterated; it must be absolutely pure, and they find that even the best honey-dew is quite inferior for their use.

Short Summer Courses.—Dakota State College of Agriculture and the Massa-

chusetts Agricultural College give courses in practical field-work and demonstrations on the handling of bees, open to anyone who wishes to take advantage of the instruction, no fee being charged. No fewer than five learned doctors deal with such interesting subjects as handling bees, honey-crops, pollination, bee-supplies, and the evolution of the honey-bee.

Old Foundation.—So capable a man as Mr. C. P. Dadant, even although a maker of comb-foundation on a large scale, says a good word for old foundation. "It is safe to say that old comb-foundation, which has been properly kept, will be worked by the bees as readily as the new goods as soon as it has been heated sufficiently." But, remember it must be kept carefully.

Baby Nuclei.—These have been weighed in the balance and found wanting. *Gleanings* found them efficient during a short period in the very hottest part of the year, and even then there was often trouble. "At any time they were liable to swarm out, or, worse still, be robbed out, and they had to be supplied with fresh bees ever so often." The "Langstroth" frame, too, makes a poor nucleus, being too large and too long. Over there and over here a frame about half the length of the standard is found the best, and a "twin" hive, giving accommodation to a pair of two-frame nuclei, is generally employed. The form of the hive is thus nearly a square, with a thin ⅛-in. division-board, and two clusters of bees numbering each from 1,000 to 1,500. Sladen's nuclei hives, and frames about half the standard size, approximate to these dimensions. The frames are in pairs, fixed on hinges, and when turned together can be placed in the centre of any hive in place of the regular standard.

Non-swarmers.—Two devices to check or prevent swarming are illustrated in May 1 issue. The cure, to me, appears worse than the disease, and the same may be said of the barbarous plan advocated in the *Review*, whereby a Dr. Jones, of Minnesota, seeks to eliminate swarming by periodically cutting off the heads of hatching brood in all but two frames of the body-box.

Six Well-taken Points.—These extracts are from *Gleanings:* 1. When a little honey is coming in it is much easier to introduce a queen. 2. A queen in the height of egg-laying will be accepted far more readily than one four or five days in the mails. 3. Some colonies are more nervous than others. Opening one of these on an unfavourable day courts failure. 4. It is easier to introduce towards night or after dark than during the day. Bees are then not expecting trouble. 5. A fasting queen will usually ask for food, and hence will generally be treated more considerately. 6. The scent factor cannot be ignored.

Selling Honey.—The *Review* says: "The indifference exhibited by some honey-producers in disposing of their crop is certainly exasperating. In other lines of business production is looked upon as only half the problem, but in bee-keeping there too often prevails a system of 'I'll-take-whatever-you'll-give-me.' Far too many of our home producers are content to dump down their honey on the grocer's counter and accept any offer he is prepared to make them. These are miserable business tactics. The offer is bound to be low, and unfortunately it reacts on others. Hearing that a neighbour has sold at a given figure, another seller follows the bad example, with the result that prices rule low all over."

No Gloves.—As soon as the budding bee-keeper has "found his feet" he will discard gloves as useless encumbrances. A writer in the *Canadian Bee Journal* goes further, and wants his arms bare as well as his hands. "I recommend and practise rolling up the shirt-sleeves over the elbows when at work among the bees. By doing so the apiarist will not be stung so much about the wrists." He attributes the wrist-stinging to odour, whereas I think it is caused mainly by the shirt-cuffs pressing on the bees and thus raising their ire.

Heather in Germany.—Translated from a German bee-journal we have the following statement: "In the northern part of Germany many hundred thousand colonies of bees are every year moved to the large tracts of heather in Lunenburg. According to the statement of the K. Railroad Director of Hanover, during the night of July 7 last year 250,000 colonies were transported on special trains, and during the night of July 30 120,000 colonies passed the station of Uelzen. It is estimated that the Lunenburger heathers pastured about half a million colonies last year." This is exceedingly interesting, but I quote it mainly to query how they survived the winter fed solely on heather honey, if heather honey is so deleterious as some would make us believe? Might I "guess" that the percentage of survivals was a full average of that of bees wintered on *any* kind of food?

MAY RAINFALL.

Total fall, 2.07 in.

Above average, .15 in.

Heaviest fall in 24 hours, .27 in. on 16th.

Rain fell on 17 days.

W. Head, Brilley, Herefordshire.

WEATHER REPORT.

WESTBOURNE, SUSSEX.
May, 1910.

Rainfall, 1·95 in.	Minimum temperature, 30° on 10th.
Exact average.	Minimum on grass, 26° on 11th.
Heaviest fall, ·35 in. on 18th.	Frosty nights, 3.
Rain fell on 16 days.	Mean maximum, 60·6.
Sunshine, 241·2 hours.	Mean minimum, 44·9.
Above average, 4 hours.	Mean temperature, 54·7.
Brightest day, 16th, 14·1 hours.	Above average, 3·2.
Sunless days, 2.	Maximum barometer, 30·331 on 1st.
Maximum temperature, 73° on 22nd and 23rd.	Minimum barometer, 29·520 on 6th.

L. B. BIRKETT.

BARNWOOD, GLOUCESTER.
May, 1910.

Rainfall, 1·51 in.	Warmest days, 22nd and 23rd, 75.
Below average, ·23 in.	Coldest night, 8th, 26.
Heaviest fall, ·51 in. on 16th.	Number of nights with frost in the air, 4; on the ground, 8.
Rain fell on 17 days.	Relative humidity, or percentage of moisture in the air, 76.
Total to date, 10·21 in., as compared with 7·21 in. for the corresponding period of last year.	Number of days with sky completely overcast at 9 a.m., 14; do. cloudless, 2.
Mean maximum temperature, 62·2; ·8 of a degree below average.	Percentage of wind force, 16.
Mean minimum temperature, 43·1; 2·9 below average.	

F. H. FOWLER (F.R.Met. Soc.).

Bee-Shows to Come.

July 13 and 14, at Osmaston Park, Derby. Honey Show of the Derbys. B.K.A., held in connection with the Derbyshire Agricultural Society's Show. Several Open Classes for Honey.—Schedules from R. H. Coltman, 49, Station Street, Burton-on-Trent. **Entries close July 7.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A.

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close July 9.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. Schedules and form of entry from John Maughan, Secretary, Blake Street, York. **Entries close June 25.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

Notices to Correspondents.

C. R. A. (Workington).—*Queen-rearing.*—We have not tried the plan your friend recommends, and usually take more care in transferring an egg than drawing it up in a fountain-pen filler and squirting it into an enlarged cell. No doubt the bees would rear a queen-cell on the enlarged cell if the egg is transferred to it without getting damaged. There is no necessity to add honey, as the bees

prepare proper royal jelly for feeding the larva when it emerges.

NEMO (Bradford).—*Drone-laying Queen.*—The queen has become a drone-layer as the spermatheca is nearly exhausted. You have done right in giving a comb of brood with eggs and young grubs.

J. O. (St. Petersburg).—*International Bee-Congress.*—The next International Bee-Congress is to be held in Brussels on September 25 and 26 next. Write for particulars to the secretary, M. Louis Genenceaux, 8, Rue Gregoire-Bodart, Huy (Liege).

F. A. A. (Fowey).—*Cells of Bee.*—1. The earth cells you send are made by *Osmia rufa*, a mason-bee, which is not at all particular where it makes its nest, and will do so sometimes in a door lock. The yellow pellets are masses of pollen stored in the cells for the young. 2. Sorry to hear that you think the Isle of Wight disease has reached your neighbourhood, and hope you may find that it is some other less contagious disease showing similar symptoms.

WEETLEY (Burley-in-Wharfdale). — *Medicago lupulina.*—This is a first-class bee-flower, and where sufficiently abundant yields an excellent honey.

J. W. G. (Huddersfield).—*Dark Honey from Skep.*—1. You do not say if the honey was stored last year, for if it was this would probably account for its dark colour, as there was so much honey-dew collected last season. If you will send a sample we should be able to say if it was fit for eating or feeding bees. Very much depends on the amount of honey-dew it contains. 2. The ripening process consists in allowing the honey to settle in a deep can. If kept in a warm place for a few days it can be drawn off from the bottom and put into jars. The liquid portion which floats on the top can be used for feeding bees, as it would be liable to ferment in the jars.

B. B. (Ramsgate).—*Fixing Calico on Roof.*—1. Put a layer of paint on the roof, and place the calico on this, smoothing it down on to the wood. The calico should be about 2 in. larger than the top of the roof, so that it can be turned under round the edges and tacked down with fine tin-tacks on the under side. When the paint is dry enough, put on another coat or two over the calico. 2. It will only do if it can be consumed and utilised at once, as it is likely to crystallise if stored. 3. Because it is too complicated, and there is too much sticking together of the different parts to make it easily workable. If the parts are close together they get propolised, and in drawing out bees are liable to be crushed. If too far apart bees escape into outer space, and there is also too much draught.

J. W. M. (Edinburgh).—*Bees in Observatory-hive.* — We should think the failure in getting the bees to remain in your observatory-hive was caused by your putting in only part of the swarm and removing their own queen. They naturally wished to find her, and consequently left the hive. In such circumstances it is not surprising that they took no notice of the frames of brood you placed in the observatory, as they were too intent on searching for their queen. In giving brood, combs containing it in all stages should be selected; but even this would not induce a swarm, whose queen was removed, to remain unless the bees were shut up as soon as hived.

A. H. (Patcham).—*Preventing Swarming.*—1. Cutting out queen-cells will not prevent first swarms from issuing, but if all cells but one are cut out after a first swarm has left it will prevent subsequent swarming. 2. Let the bees swarm, put them into a hive with frames of comb-foundation, put on excluder and the supers from parent hive, and place the swarm on the old stand, removing the old hive to a new position. All the flying bees will join the swarm, and work will continue in the supers. If you do not want increase you can take out the combs from the old hive and brush all the bees off on to alighting-board of swarm, giving the frames of brood to other hives to hatch out.

H. B. G (Pangbourne)—*Honey as Food for Bees.*—1. You should mix enough warm water with the honey to make it of the same consistency as syrup. The quantity will depend on the density of the honey, but for spring feeding about a fifth part of water can be added and well stirred in. 2. For medicating this, to every gallon of liquid add ½ oz. of naphthol beta solution No. 1 in "Guide Book," page 194. 3. The only way is to make it into Scholtz candy according to recipe No. 3 on page 196; but this should only be used in the spring, as it is too deliquescent for winter use.

H. R. (Didsbury).—*Scientific Articles.*—The treatment of the egg is only of importance in the event of its adherence being caused by an obstruction and inability of the queen freeing herself from it in the usual way. 2. Such scientific articles as you suggest have already appeared from time to time in the JOURNAL. A complete series of articles on microscopic investigation and mounting objects were published some years

ago. Articles on breeding appeared so recently as last winter. We will keep your suggestions in mind and see how far they can be carried out during the winter months.

READER (Neath).—*Common Black Bee.*—This bee is equally common on the continent of Europe. You will see it advertised in B.B.J. of June 2, page iv., by A. Wilmer, of Lauterbach.

F. H. P. (Polperro).—*Dying Bees.*—It is not possible to correctly diagnose dead bees such as those you send, but they appear to be quite normal. You must not assume that because there are dead and dying bees on the ground that they have Isle of Wight disease. There are many other causes for mortality amongst bees. A great many young bees are not able to fly owing to malnutrition from lack of pollen at the time it is wanted for their nourishment. Then there is paralysis, and also May pest, both of which show similar symptoms. A great many bees are also lost through being poisoned, owing to the spraying of fruit-trees when in bloom, or killing weeds on paths. We have not heard of Isle of Wight disease being anywhere in your neighbourhood.

E. P. (Newbury).—*Colony Producing no Honey.*—There is nothing the matter with the comb sent, and it only contains hard pollen. The queen also is quite normal. As you are in a good district, we can only attribute your failure to obtain honey during the last three years to the colonies not being strong enough at the right time. Hives should be crowded with bees when the honey-flow commences, and if supers are put on in time the bees would take advantage of them to store honey. Stimulative feeding to induce brood-rearing should be commenced in your district at the beginning of April. It is only possible to obtain honey with strong colonies.

W. H. K. (Cardiff).—*Drone-brood in Super.*—As you use drone base-foundation in your supers, it is only natural that as you did not prevent her from going up into them by using excluder, the queen should utilise the combs for drone-brood. Your best plan now is to place excluder between hive and super, allow the drones to hatch out, and destroy them. This can be done by removing the super with excluder attached to it to a short distance, when the workers will pass through the excluder and return to their hive, leaving the drones only in the super. These can be destroyed with sulphur fumes.

SIMPLEX (Hadleigh).—*Bees Cast Out.*—These are immature drones, cast out by the bees probably because there are too many in the hive. The other insect is a wax-moth, which frequently infests weak or neglected hives.

J. L. F. I. (Lichfield).—*Honey Sample.*—The honey is good in colour, though rather thin in consistency. It is gathered from clover mainly, and should be entered in class for light honey.

C. M. P. (Yarmouth).—*Bee-flower.*—The flower is *Medicago lupulina*, commonly called melilot trefoil or yellow clover. It is a good bee-plant. (See reply to "Weetley.")

A BEGINNER (Herts).—*Dying Bees.*—From your description we should say that your bees are dying from Isle of Wight disease, which is prevalent in your neighbourhood.

Suspected Combs.

J. M. (Essex) and C. R. F. (Herts).—Comb is infected with black brood.

H. (Cornwall).—There is no disease, but a fertile or "laying" worker is present in the hive.

ENQUIRER (Lancs).—There is no foul brood in comb. It appears to be chilled only.

E. S. (Cornwall).—Foul brood in early stage of the disease. On no account use the shallow frames for any of your other stocks. It is probable that none of them will take the disease, as you were so prompt in your treatment and the conditions for bees are so good at present; but keep a careful look-out when overhauling stocks in autumn before packing them up for the winter, in case any of them have also contracted disease.

G. M. A. (Sussex).—Both the brood in comb and the larvæ, sent separately, have been chilled. Probably in your anxiety to see if bees were all right you have examined the combs when weather was too cold.

R. M. W. (Stirling).—The sample of comb shows that foul brood in the advanced stage is infecting the hive.

W. G. (Northumberland).—There is no brood at all in the comb, and no trace of honey or pollen. From the appearance of the bees we should say they had died from starvation.

P. B. (Woodford).—Comb is affected with foul brood. It is always unsafe to unite a dwindling stock with a healthy one, unless you are certain that disease is not the cause of the weakness, and in the present case you can hardly hope that the two stocks will escape infection. Take away the combs from diseased hive which you gave them, and hope for the best. The bee is not fully developed, and, having been dead for some time, has dried up.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows :—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

HONEY, new, full Sections, 10s. dozen; few Swarms.—MEPHAM, Orlestone, Ham Street, Kent. b 13

HIVES FOR SALE.—One ready for Swarm, one double, one with frames; bagatelle board, garden hose.—Particulars, BATEMAN, Mellor, Marple Bridge. b 12

STRAW SKEPS FOR SALE, fair condition, been used, 1s. each, carriage paid. — JOHN HONEYBEE, Charminster, Dorchester. b 14

HIVES FOR SALE.—"W. B. C." and "Cottager's" pattern, standard size, painted three coats, perfect condition, Racks of Shallow Frames, Combs drawn out.—HILL, Ashley, Stockbridge, Hants. b 15

2 NEW DOVETAIL "W. B. C." HIVES, 11s. 6d. each; 8 Supers, 2s. 6d. each.—GREEN, Bigg House, Arnold, Notts.

1 CWT. NEW HONEY (PALE), in 28-lb. tins, 60s.—COOK, Worlington, Soham. b 1

3 STRONG HEALTHY STOCKS, on 10 Frames, 30s. each.—NELMES, Cathcart. a 99

"W.B.C." HIVES, cheap. Bees wanted. Will exchange.—WILLETT, JUN., Bee-keeper, Malden, Surrey. a 100

SUPERS.—Several boxes clean, straight, drawn-out shallow frames, 5s. 6d.; Crates, Sections, with starters, 2s. 9d.; "W.B.C." Section Racks, with Sections, 3s. 6d. — PIDDUCK, Grove House, Alsager, Cheshire. a 98

PURE CARNIOLAN STOCK, 7 frames, healthy, 30s.; without hive.—NORTON, 21, Mansfield-road, Croydon. b 5

WANTED, Honey Ripener, good condition, or Honey Jars, in exchange for gentleman's silver watch.—SMITH, Bridge-street, Thrapston. b 6

MUST GO.—10 Stocks of Bees, healthy, supered, with everything for an apiary. 2 Super-clearers, 12 frames, wired B Foundation, spur embedder, 3½ dozen Separators, Sections, Metal Ends (new), 2 empty Hives (1 "Wells"), 3 Nucleus Hives, a 21s. Extractor, Stocks, 18s. each, or £9 10s. the lot, put on rail; also books by Bonner, 1795, T. M. Howatson, J. De Gelim, what offer? No reasonable offer refused. — A. COOK, Gardener, Ratho, Midlothian, Scotland. b 7

6 STRONG WELL-MADE STANDARD FRAME HIVES, 11-in. lifts, nearly new, some never had Bees in, 5s. each.—W. PRINGLE, 2, Commercial-square, Winlaton, Blaydon-on-Tyne. b 10

1 DOZEN QUEEN EXCLUDERS, 18 in. square, border all round, 7s. 6d. — 119, Dunstall-road, Wolverhampton. b 11

BEE-TENT WANTED, new or secondhand. — Apply, with full particulars, to SECRETARY, S.B.K.A., Gippeswyk Hall, Ipswich. a 85

Special Prepaid Advertisements.—*Continued.*

FOR SALE, "W. B. C." Hives, 6s.; large Hives, take 16 Frames, on "W. B. C." principle, 10s.; smaller Hives, 4s.; lot of other appliances, half price. Obliged to give up, cause selling so cheap. —J. GRATTAN, Expert, B.B.K.A., 54, Herbert-road, Plumstead, Kent. b 8

FOR SALE, 6 Stocks of Bees, Bar Frame Hives, 3-Frame "Observatory" Hive, new, 2-Frame "Cowan" Geared Extractor, 15 Crates Shallow Frames, a few built out, 6 Shallow Frame Show Cases, 3 Standard ditto. Will sell in lot or separately.—Apply, T. W. RINGER, Tatsfield, Surrey. b 12

HONEY, granulated, good flavour, rather dark, in 28-lb. tins, 6d. per lb. Sample, 2d.—C. FIELDER, North Mimms, Hatfield. a 96

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

QUEENS, "Doolittle" Strain, Virgins, 1s. 6d., now ready; book Fertiles for delivery in turn, 5s. each. A County Association expert writes: "Forward four more Queens at your earliest convenience; very pleased with last lot."—D. G. TAYLOR, Ilminster. b 9

FOR SALE, Prime Natural Swarms, 12s. 6d. each, carriage paid, cash with order.—G. A. GILLETT, Moreton-in-Marsh, Glos. b 2

ITALIAN QUEENS, direct from Italy.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," June 9. Abatement till countermanded. Prompt delivery.

QUEENS, 1910.—Special Hybrids, 5s.; Blacks, 4s. 6d.; Virgins, from 2s. 6d.; in introducing cage.—BRICE'S APIARIES, Otford, Kent. b 16

WANTED, Healthy Stocks, on Frames and in Skeps, also Swarms.—POSTMASTER, Breachwood Green. b 15

GUARANTEED HEALTHY.—Swarms (natural), from 30 Stocks, 4-frame Nuclei, with fertile Queen, 14s. 6d.; Virgin Queens, 2s. 6d.; all from noted Cheshire Apiary.—MERE FARM APIARY, Nether Alderley, Chelford. a 91

A STOCK FOR 8s.—I send post free in special box 1 quart of Bees (enough to build up into strong stock for winter), with carefully-reared imported young fertile Italian Queen, and book with full instructions, guaranteed healthy.—HILLMAN, Stonehouse, Glos. a 74

PURE IMPORTED ITALIAN QUEENS, by return of post, 4s.—HILLMAN, Stonehouse, Glos. b 4

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. Terms: Tea, bed, and breakfast, 3s. 6d.; or full board, 5s. per day.—HORSLEY'S, Merridale House, top of Castle Drive, Douglas, Isle of Man.

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. G. M. DOOLITTLE.

We have much pleasure in presenting to our readers the portrait of Mr. G. M. Doolittle, the veteran American bee-keeper, who is so well known through his writings.

Mr. Gilbert M. Doolittle was born on April 14, 1846. His parents were among the pioneers who came to central New York when it was almost a wilderness of forests, consequently he had few advantages as to schooling, for in those days all the family were expected to do their full share at clearing up and providing for the general welfare of the "coming farm and home." His father procured a colony of bees when Gilbert was about eight years old, which increased by natural swarming to twenty or more five years later, providing honey not only for the family, but also enough to exchange for its necessaries. Then came that dreaded scourge known as "foul brood," and in two years not a bee was alive. But the bees were ever uppermost in his mind and formed a favourite topic of conversation. He was married on July 2, 1868, to Miss Frances R. Clark, who has been his partner in all his joys and sorrows, as well as a large factor toward the success attained with the bees. Mr. Doolittle was brought up a farmer, but the general round of agriculture did not seem to meet his highest ideal of farming, so in March, 1869, he purchased two colonies of bees, together with what was then considered the necessary fixtures for a "start in bee-keeping," the whole outfit costing $35, and after this first outlay he did not spend a single penny on the bees above what they earned for him. These two colonies were increased until during the latter seventies he numbered his colonies by the quarter of a thousand—in some years he had a few more, and at times a few less. In 1879 his father became helpless through illness, so that during the next five years Mr. Doolittle had to devote much of his time to caring for him. His colonies became reduced to

MR. G. M. DOOLITTLE.

about a hundred by the end of the honey-harvest of 1884, when his father died. After this he did not try to increase his apiary, but turned his attention to making each colony produce the largest yield possible by keeping them in a condition which would put the maximum number of bees into action just at the commencement of the main harvest of white-clover honey and basswood bloom. By this means he has secured as much as 309 lb. of section-honey from a single colony in one season, leaving the necessary amount for winter stores and food for the colony during the whole year; and again 566 lb. of extracted honey was obtained in a single year from a single colony under the same management. He made a yearly average of nearly 100 lb. per colony of section honey from the whole apiary for fourteen consecutive years. One of Mr. Doolittle's pleasures with bees has been the raising of queens of the highest standard, and he has sent queens from this stock to almost every part of the globe where bees are kept. This branch of bee-keeping gave him so much pleasure that he published his methods in 1889, under the title of "Scientific Queen-Rearing." Previously to this, in 1879, he published a pamphlet, "Description of the Hive I Use." During the next fifteen years his hobby was the prevention of swarming, together with the securing of the greatest possible amount of section-honey. This came very near baffling him, but the matter was finally worked out by means of a little manipulation, and that in a way which put every pound of honey in the sections which was not used by the bees in maintaining the colony in a most prosperous condition throughout the whole year. By this plan he secured an average of 114½ lb. of section-honey from the colonies at an out-apiary during the very poor season of 1895 without having a swarm. How this was done he described in *Gleanings in Bee Culture* during 1906. Later this was put into book-form by the publishers under the title of "A Year's Work in an Out-Apiary." Through failing health and the infirmities of old age creeping on, Mr. Doolittle was led in 1904 to take Mr. Pembroke G. Clark as a partner, and as Mr. Clark proved very efficient the larger part of the active work with the bees now falls on him. Mr. Doolittle is a prolific writer, and we have frequently reproduced his writings for the benefit of our readers. He still keeps up his "Conversation" department in *Gleanings* and his regular articles for the *American Bee Journal*. We trust that he may long be spared to give the bee-world the benefit of his long experience.

"ROYAL" SHOW AT LIVERPOOL.

The seventy-first annual exhibition of the Royal Agricultural Society of England was held in Wavertree Playground, Liverpool, from June 21 to 25. The ground was one of the best and most compact upon which the show has been held for a number of years. The weather was marred on Wednesday and Friday by wet, but otherwise it was an ideal show. In a populous district like Liverpool, possessing such good travelling facilities, the attendance was naturally large, though it did not quite reach that of Newcastle. Northerners are enthusiastic agriculturists, and even bad weather does not prevent them from attending a good show in large numbers.

Bee-keepers were very much in evidence, and many a group engaged in animated conversation could be observed on each day. The duties of judging were carried out by Mr. W. F. Reid, Addlestone, Surrey; Mr. C. L. M. Eales, Wallington; and Mr. F. H. Taylor, Chorley, Lancs. Their duties were not onerous, as the entries in the honey classes were not large, although the appliance classes were very well filled. The secretary of the Lancs B.K.A., Mr. J. N. Bold, of West Derby, acted as steward, and fulfilled his duties in a most efficient manner. When the weather permitted their being held the bee-demonstrations were a centre of attraction, and large crowds listened to the lectures, and asked many questions of the B.B.K.A. expert, Mr. W. Herrod.

Six capital exhibits were staged in the collection of appliances. Messrs. Jas. Lee and Son, London, obtained premier honours with a very neat and workmanlike exhibit, Mr. E. H. Taylor was placed second with a very good collection, while Mr. Meadows, Syston, came third with one which contained a large number of his well-known metal appliances. Mrs. Seadon, Bromley, also staged a very complete and well-arranged collection, and Mr. George Rose, Liverpool, showed two.

In the class for best hive there were fifteen exhibits staged—an unusually large number, the first prize being carried off by a "W. B. C." hive made by hand by an amateur, Mr. Tunstall. It was a splendid piece of workmanship, but the price (four guineas) made it prohibitive for the ordinary bee-keeper, and one is inclined to wonder whether it would not be wise for the judges to take price as well as workmanship into consideration when making their awards. Messrs. Abbott Bros. took second prize with a "W. B. C." pattern hive constructed in their best style, while Mr. E. H. Taylor was third with a very well-made hive.

Five exhibits were shown in the cot-

tager's hive class, Messrs. Jas. Lee and Son being first with an excellent hive for the money, 10s. 6d., which is the limit in this class. The second-prize hive of Mr. Taylor and that shown by Mr. Meadows were both very good.

In extractors Mr. Meadows was an easy first with his well-known "'Cowan' Reversible," Mrs. Seadon taking second place and Mr. Taylor third.

Observatory-hives were well represented, no less than six being staged, and they proved a source of great attraction to visitors during the whole of the show.

In the class for new appliances the first prize went to an exhibit of wire dividers and excluders. In this class Mr. Meadows staged a six-frame extractor driven by a petrol engine of unique design, being minus valves, and with every working part easy of access, and manageable by the veriest novice. Though a very ingenious and efficient appliance, there is no doubt that no apiaries are large enough in this country to warrant the purchase of such a large appliance, and probably this influenced the judges in making their awards, as it was placed second.

Trophies, of which there were six, were a special feature of the show, all of them being admirably staged. That of Messrs. Brown and Son was entirely of this year's produce.

The other classes were only moderately filled, and there was nothing unusual to note about them. The awards were as follows:—

HIVES AND APPLIANCES.

Class 500.—*Collection of Hives and Appliances, including Suitable Outfit for a Beginner in Bee-keeping.*—1st, Jas. Lee and Son, Martineau Road, Highbury, London; 2nd, E. H. Taylor, Welwyn, Herts; 3rd, W. P. Meadows, Syston, Leicester; r.n. and h.c., George Rose, 50, Great Charlotte Street, Liverpool; h.c., Mrs. Seadon, Bromley, Kent.

Class 501.—*Complete Frame-hive for General Use.*—1st, H. G. Tunstall; 2nd, Abbott Brothers, Southall, London; 3rd, E. H. Taylor; r.n. and h.c., George Rose; c., W. P. Meadows.

Class 502.—*Complete Frame-hive for Cottager's Use, price not to exceed* 10*s.* 6*d.*—1st, James Lee and Son; 2nd, E. H. Taylor; 3rd, W. P. Meadows; c., G. Rose.

Class 503.—*Honey-extractor.*—1st, W. P. Meadows; 2nd, Mrs. Seadon; Certificate of Merit, E. H. Taylor.

Class 504.—*Observatory-hive with Bees and Queen.*—1st, James Lee and Son; 2nd, W. Dixon, Kirkgate, Leeds; 3rd, E. H. Taylor; r.n. and h.c., J. Pearman, Penny Long Lane, Derby.

Class 505.—*Any Appliance connected with Bee-keeping.*—1st, James Lee and Son; Certificate of Merit, W. P. Meadows.

HONEY.

Class 506, confined to members of the Lancashire Bee-keepers' Association.

Class 506.—*Twelve* 1-*lb. Jars of Granulated Honey.*—No 1st prize awarded; 2nd, A. S. Dell, Leigh, Lancs.

Entries in Classes 507 to 510 can only be made by residents in Cheshire, Cumberland, Derbyshire, Durham, Herefordshire, Lancashire, Leicestershire, Lincolnshire, Monmouthshire, Northumberland, Nottinghamshire, Rutland, Shropshire, Staffordshire, Warwickshire, Westmorland, Worcestershire, Yorkshire, the Isle of Man, Ireland, Scotland, or Wales.

Class 507.—*Twelve* 1-*lb. Sections.*—1st, J. Pearman; 2nd, N. Grant Bailey, Wadenhoe, Hough Green, Chester; 3rd, H. C. Gibson, Ballygowan, Belfast.

Class 508.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, H. W. Seymour, West Street, Alford, Lincs; 2nd, J. Pearman; 3rd, A. S. Dell; r.n. and h.c., R. Morgan, Cowbridge, Glam; h.c., A. W. Weatherhogg, Willoughton, Lincoln; W. Lowe, Rainhill, Lancs.

Class 509.—*Twelve* 1-*lb. Jars of Extracted Medium or Dark Coloured Honey.*—1st, J. Pearman; 2nd, N. Grant Bailey; 3rd, A. S. Dell.

Class 510.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, A. W. Weatherhogg; 2nd, J. Woods, Nettleworth Manor, Mansfield; 3rd, J. Pearman; r.n. and h.c., Neville W. Withew, Knocken, Oswestry; h.c., A. S. Dell.

Entries in Classes 511 to 514 can only be made by residents in Bedfordshire, Berkshire, Bucks, Cambridgeshire, Cornwall, Devon, Dorset, Essex, Gloucestershire, Hampshire, Herts, Hunts, Isle of Wight, Kent, Middlesex, Norfolk, Northamptonshire, Oxfordshire, Somerset, Suffolk, Surrey, Sussex, or Wiltshire.

Class 511.—*Twelve* 1-*lb. Sections.*—1st, R. Brown and Son, Somersham, Hunts; 2nd, C. W. Dyer, Compton, Newbury; 3rd, Miss F. E. Barker, Albans Farm, Barnston, Dunmow; r.n. and h.c., R. H. Baynes, Bridge Street, Cambridge.

Class 512.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, R. Brown and Son; 2nd, R. H. Baynes; 3rd, S. G. S. Leigh, Boughton, Hants; r.n. and h.c., G. W. Kirby, Knowle, Bristol.

Class 513.—*Twelve* 1-*lb. Jars of Extracted Medium or Dark Coloured Honey.*—1st, C. E. Billson, Cranford, Kettering; 2nd, R. H. Baynes; 3rd, G. W. Kirby.

Class 514.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, R. Brown and Son;

2nd, R. H. Baynes; 3rd, Miss F. E. Barker.

Class 515.—*Three Shallow-frames of Comb Honey for Extracting.*—No 1st prize awarded; 2nd, Miss F. E. Barker.

Class 516.—*Six* 1-*lb. Jars of Heather Honey.*—1st, J. Pearman; 2nd, M. J. Lamboll, Chiddingfold, Surrey; 3rd, Burn and Botham, Phœnix House, Whitby; r.n. and h.c., W. Dixon.

Class 517.—*Six Jars of Heather-mixture Extracted Honey.* — 1st, J. Pearman; 2nd, W. Dixon; 3rd, W. E. Brooking, Malborough, Kingsbridge, Devon; r.n. and h.c., A. S. Dell.

Class 518.—*Honey Trophy.*—1st, A. S. Dell; 2nd, J. Pearman; 3rd, R. Brown and Son; r.n. and h.c., W. Dixon.

MISCELLANEOUS.

Class 519.—*Beeswax* (*not less than* 2 *lb.*).—1st, J. Pearman; 2nd, Goodburn Brothers, Peterborough; 3rd, E. H. Smiles, Dartford; r.n. and h.c., R. Brown and Son; h.c., J. Berry, Llanrwst, North Wales; c., A. Willmott, Stanstead Abbott.

Class 520.—*Beeswax* (*not less than* 3 *lb., in Shape, Quality, and Package Suitable for the Retail Trade*).—1st, J. Pearman; 2nd, Goodburn Brothers; 3rd, J. Berry; r.n. and h.c., F. W. Frusher, Crowborough, Peterborough.

Class 521.—*Honey Vinegar* (1 *quart*).—1st, G. W. Kirby; 2nd, J. Pearman; Certificate of Merit, A. S. Dell.

Class 522.—*Mead* (1 *quart*).—1st, Jones Brothers, Monks Acre, Andover, Hants; 2nd, R. Brown and Son; Certificate of Merit, J. Pearman.

Class 523.—*Exhibit of a Practical or Interesting Nature Connected with Bee-culture.*—1st, A. S. Dell; Certificate of Merit, W. Dixon.

Class 524.—*Exhibit of a Scientific Nature.*—1st, George Rose; Certificate of Merit, W. Dixon.

NEW BEE-KEEPERS' ASSOCIATIONS IN SCOTLAND.

MEETING AT ABERDEEN.

A well-attended meeting of bee-keepers was held in the Agricultural Lecture Hall of Marischal College, Aberdeen, on June 4 for the purpose of forming a county B.K.A. The meeting was presided over by Mr. D. M. Macdonald, who addressed the gathering on the benefits of associated effort. He pointed out that the county was a most favourable one for such an association, the natural features and configuration, with the facilities made by man, all lending themselves admirably to successful management; while in the leading staple supplies of nectar few districts in our island can excel it. One of the aims of the society would be to educate the members on the subject of preparing their honey for sale, so that they might receive full value for the product, while it would also exist for the purpose of giving information regarding the proper management and manipulation of bees. In various centres bee-clubs could also be formed; they would aim at securing a bee-library, and no doubt bee-lectures would be delivered at different points. It would be a chief aim to secure exhibitions of honey and bee-appliances not only at the central horticultural show in the city, but also at every agricultural and horticultural show in every local centre. These local centres should be planted down all over the county wherever ten or more members could be secured.

A general discussion followed, in the course of which it was indicated that there was likely to be a fairly large membership, as shown by the attendance, the names handed in of those ready to join, and the letters of approval already addressed to Mr. A. Low.

Mr. Alexander Manson, Lecturer Aberdeen and North of Scotland College of Agriculture, was appointed secretary, with assistance from Mr. Low and Mr. Thomson, Buchan. It was suggested that Lord Aberdeen be asked to accept the post of hon. president, and the following vice-presidents were proposed: The Right Hon. R. Farquharson, of Fingean, Lord Leith of Fyvie, Countess of Southesk, Lady Saltoun, Mr. Smith, of Pittodrie, and the M.P.s for city and county, with a number of others to be added later.

The following members of committee were appointed, with powers to add to their number: Messrs. Low, Machar, Manson, Thomson, Milne, Calder, Calto, W. Kennedy, Moir, Mrs. Bigg, Miss Littlejohn, and Chief Constable George. Over forty members joined at the meeting, and fully that number of names in addition were handed in of those willing to become members.

FORMATION OF SPEY VALLEY BEE-KEEPERS' ASSOCIATION.

The idea of associated effort amongst apiarians seems to be in the air at present. Following immediately after the successful launching of the Aberdeenshire Association on June 4, a meeting of bee-keepers, called by Mr. A. Keir, Craigellachie, was held in the Fleming Hall, Aberlour, when about forty gentlemen attended on very short notice. Dr. Sellar, Aberlour, presided, and Mr. D. M. Macdonald, Schoolhouse, Morinsh, gave an address on apiculture and the benefits to be derived from an association of those interested in this fascinating pursuit. The heartiest interest was exhibited in the movement, and after several had spoken cordially in favour of the proposal it was unanimously agreed to form

an association, to be called the Spey Valley Bee-keepers' Association. This name was adopted to prevent collision with the Banffshire B.K.A. already in existence and a Morayshire proposed to be formed, and also to cover as large an area as possible. This it does, as Strathspey includes a very large tract of three counties. The office of hon. president was left over for future consideration, but several names of prominent residents in the district were proposed as patrons, &c. Mr. Macdonald was appointed hon. vice-president, Dr. Sellar was elected president, and Messrs. Grant and Duncan vice-presidents; while a committee with powers to add to its number includes the names of Rev. Father Thomson, Rev. William Stuart, Messrs. Imlah, P. Cruickshank, Littlejohn, Murison, R. G. Morrison, Forsyth, A. Garrow, Keir, Dunbar, Fraser-Mackay, and Baillie Raffan.

A proposal to do everything possible to aid the movement for securing legislation for the suppression of foul brood was unanimously carried. In launching the association, it was resolved to leave nothing to chance, and a propagandist campaign was agreed on, whereby the various centres should be visited, to stir up the apiarian enthusiasm. The first of the series was held in Dufftown on Wednesday last, when, in the absence through illness of Provost Macpherson, Mr. Alex. Davidson took the chair. Mr. Macdonald again gave an address, after which a local centre was formed. Twenty new members joined in this centre.

The newly-formed society has resolved to hold apiarian exhibitions at Craigellachie in connection with the cattle show, at Dufftown at the horticultural exhibition, and at Grantown Agricultural show, all during the month of August.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION IN GERMANY.

[7849.] The following is a translation of a notice in the *Frankfurter Zeitung:*

"According to a notice sent by the Minister of Agriculture to the local Boards of Agriculture, it has been determined, as the result of some years of research, to introduce legislation applying to the whole Empire (*i.e.*, *Reichsgesetz*) for the suppression of foul brood.

"It is to contain the following clauses:

"The compulsory notification and steps being taken with regard to suspected hives.

"Methods of determining presence of the disease.

"Methods of fighting it, *i.e.*, destroying combs, brood, and honey, and, in certain circumstances, the bees.

"Disinfecting.

"Time of observation.

"Compensation for losses sustained, due to measures taken under the Act, the amount proposed being two-thirds of value of material destroyed.

"Compulsory insurance.

"Measures for preventing disease being brought in from other countries; proposed prohibition of importation of stocks on combs, and pressed honey.

"The local Boards are asked for suggestions and an expression of opinion."

I enclose cutting from the paper in question. I believe I am right in assuming that the Editor knows German? [Yes.—Ed.]

I may say that I thoroughly approve of legislation of the proper kind, and if you think it will be of interest I will report further as soon as more is made public. — Walter Ed. Zehetmayr. Twickenham.

[We shall be glad to hear what progress legislation is making in Germany.—Ed.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

South African Bees (page 217).—If a queen of this race can be successfully introduced to a stock of our native bees, I should be very glad to make arrangements with Mr. Martin to supply one, so that I might report as to their qualities and suitability to our climate (it may be that our atmosphere will be quite as suitable as that of South Africa for such a union of races). The description leads one to suppose that their tendency to concerted action is even greater than that of our bees, and that this might have dire result in the case of their vengeance. For these bees seem to have some, perhaps superficial, resemblance to Cyprians, whose temper is none of the best. If, however, their defence of the gateway finds a complete use for the propolis they gather, it might be possible, by the use of sufficiently large entrances, to command a marketable supply of the aromatic gum. But if they treat the frames and sections to similar liberal treatment——!

More About South African Bees (page 220).—Evidently they are an enterprising

race, as shown by their determined attempts to adopt Lord Selborne as a master. Clearly they desired to travel with him whither he was going, although it may be that they merely mistook the label on his bag for the direction to a place which was once the happy home of a celebrated naturalist, and therefore presumably a paradise for bees.

Bees and Super-bees (page 220).—If super-honey could be shown to be free from disease, what a pity it is that we cannot breed a disease-free race from the particular bees that produce it!

Treatment of Swarms (page 225).—Eminently sound advice from the ever-practical writer of "Notes by the Way." But how many, of those who happen to read it, will forget all about it and make the usual mistakes, as usual. Delay in giving a super is particularly good, because if this contains empty comb it is a tempting place for pollen and brood. Allow the swarm to establish itself, when the super from the parent colony may profitably be transferred, bees and all.

Our Friend the Enemy (page 227).—I feel quite repaid for my criticism of Mr. Baker's plea for the wasp, in that it has elicited this exceedingly interesting excerpt from his diary. The wasp does, no doubt, much useful work in the destruction of other insect pests, but when wasps themselves exist in large numbers they do infinite damage to fruit. Unfortunately their faults are much more apparent than their virtues, and until man reduces their armies to such an extent that he is forced to cry out for their help, he must pursue his course. And it was of the fruit-grower that I wrote more than of the bee-keeper, for he is, in the nature of things, comparatively defenceless.

Boys and Bees (page 227).—Is it not terrible insubordination for a Boy Scout to criticise his leader's utterances in this fashion? But it is possible that the writer of "Scouting for Boys" is only acquainted with the safe side of a relative's observatory-hive! However that may be, is it the intention to provide the Scouts with formidable allies, to be used, in the fashion of an older time, to repel invaders? Surely for such purposes the skep will best serve, whence its depiction on the badge! Or is the apiary to be the rendezvous where jaded Scouts may refresh themselves? Well, well; all success to the newcomers on the show-bench, although a good many existing bee-keepers will agree with me that it is not so much the "problem of supply" which presses as the problem of demand!

Swarming Experiences (page 229).—What will happen (perhaps has already happened) to the hive at "Dulwich" when the virgin queens begin to hatch? If the swarming solution be correct, will not a large swarm be likely to remove itself to a far distance whilst it is attending to the matter of replacing the old queen which appears unable to fly? Speaking of experiences, I had a large swarm, a fortnight ago, from a stock supered by a skep. (The supering was done last autumn, to provide stores for an otherwise strong stock.) Exactly ten days later I proceeded to make nuclei. All the queen-cells were in more or less inaccessible places in the skep, and this involved some manipulation. Some had evidently hatched; so, after obtaining half a dozen, an empty skep was just held over the other, when two or three raps sent the bees pell-mell upwards. Sorting them over, four virgin queens were discovered quite happily at large. Scooping up three small clusters, these were dumped down anywhere (in hive-roofs) until further nuclei could be made up. Then they were collected, quietly clustered, and the surplus bees divided. The point about this appeared to be the entire willingness of these bees to "stay put," and very few bees returned to the nucleus on the old stand, although uncoerced by temporary confinement.

Parthenogenesis (page 236).—I quite see the force of "Humble-Bee's" contention, which is, I take it, that nothing but the confinement of a virgin queen under such conditions that no possible relation with a drone can take place, and the production by such queen of fertile eggs, can rank as positive proof of parthenogenesis. I quite agree that the mere production of eggs by an unmated queen does not add a "further proof," to quote Mr. Pratt, of the fertility of the eggs of a single parent, but merely proves the ability of the parent to produce eggs. At the same time, it should not be difficult to produce such proof as "Humble-Bee" requires. Referring to drone-breeding queens, a reader kindly sent me last autumn one of these. She did not, unfortunately, survive the winter, but if he will send me his name and address I will forward him a young fertile 1910 queen to repay him for his kindness.

Queries and Replies.

[4018.] *Working for Section-honey.*—In the B.B.J. for June 16 (page 234) Mr. Macdonald advises putting the second rack of sections on the top of the first. Two days before I received my copy I had put my second rack *under* the

first, thinking I was doing the right thing in the orthodox manner, as I had always been given to understand that the bees would almost invariably fill up the top rack before commencing the lower one, and that the top one when completed could be taken away and a third put under the second if necessary. A casual look shows the bees have done little in my first rack, but that they are drawing out foundation and storing honey in the lower rack, which seems to show Mr. Macdonald is right. I shall be glad to see in the B.B.J. what you have to say on the matter, and where I am wrong.—WAYSIDE, Salisbury.

REPLY.—There are a few bee-keepers who place their racks above, but the majority of section-honey producers usually raise the partly-filled section-rack and place the empty one between it and the hive. The reason for this is that in this way swarming is more readily prevented, as room is given for bees to continue their work downwards. Bees generally commence drawing out the foundation and storing honey in the centre and at the top, working downwards and on both sides, therefore the centre combs and those at the top are sealed over and completed first. If a second rack is placed underneath at the proper time—that is, when the sections in the first rack are about one-half to two-thirds completed—the bees will take to the lower sections at once, and commence drawing out the foundation. If the honey-flow is good they do not stop working above, but continue storing and sealing the combs, working from the centre outwards. Some bee-keepers move the completed sections and place those not sealed over in the centre, and this, although giving extra work, assists in having the sections completed more rapidly. During a good honey-flow with such treatment the top rack is generally completed first, and can be taken away; and frequently it will be found that the centre sections of the lower one are also ready for removal. If a third rack has been placed beneath this, we remove all the finished sections and place the unfinished ones into racks, the most forward ones into the top one, as it is here that they are most likely to be finished. It is natural for bees to build comb downwards and gradually extend it laterally. Another reason why the racks are moved up is that when sections are finished in close proximity to the brood-nest they become soiled or "travel-stained" by the bees passing over them directly from the brood-nest, but when the racks are tiered the finished sections are so far from the brood-nest that they remain unsoiled until the whole rack can be removed.

Bee-Shows to Come.

July 13 and 14, at Osmaston Park, Derby. Honey Show of the Derbys. B.K.A., held in connection with the Derbyshire Agricultural Society's Show. Several Open Classes for Honey.—Schedules from R. H. Coltman, 49, Station Street, Burton-on-Trent. **Entries close July 7.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs B.K.A.

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close July 9.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. **Entries closed.**

July 28, at Middle Wallop, Hants.—In connection with the Horticultural Show. Open classes for Honey: Best 1-lb. Jar Extracted, Best 1-lb. Section. (Entry free.) Schedules from Pryce E. Roberts, Schoolhouse, Nether Wallop, Stockbridge. **Entries close July 21.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 3 and 4, at Abingdon Park, Northampton.—Honey Show of the Northants B.K.A. Special prizes for open classes, including one for single 1-lb. jar honey. (Entry free.) Judge, Mr. W. Herrod. Schedules from R. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close July 26.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead

and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

ADPAR (Newcastle Emlyn). — *Age of Queen.*—The queen sent is an old one.

A. C. (Rutland).—*Queen Cast Out.*—1. The queen is an old one. 2. You did right in putting the super below the nearly-completed rack of sections.

G. M. (Haslemere).—*Dysenteric Bees.* — As your first swarm has recovered, it is possible the second one, which appears to be suffering from dysentery, may also recover during the present plentiful honey-flow.

AMATEUR (Bridport).—*Removing Swarm from Roof of House.*—As the bees are under the thatch you must get at the queen before you can expect them to leave their nest rapidly through a cone-escape. If you fix the box with the escape in such a way that the bees must go through it and cannot get back, you would depopulate the nest in course of time by starving out the bees and queen, but it would be a cruel proceeding. Your best plan would be to remove the thatch, smoke the bees, and cut out the combs, brushing the bees off into a prepared hive. Look out for the queen and take care to put her with the swarm. Combs containing much brood could be tied into frames and given to the swarm, and when the brood has hatched out they can be removed.

A. J. S. (Yeovil).—*Beginner's Queries.*—1. The new queen has evidently been accepted, otherwise the drones would have been retained. The bees were not sufficiently numerous, and as there was plenty of room in the box they did not need to go below; this is the reason why they did not transfer themselves. 2. A bee that has lost her sting may live a few hours. 3. As the box is infested with wax-moth larvæ, drive the bees out and put them and queen below excluder, and as soon as brood has hatched remove box, get the bees out, and melt combs. 4. The explanation is that the hive sent off the first swarm on the 8th, and on 19th had queens ready for coming out with casts. As the queens had returned to the hive the bees that had clustered were hived without queens, and consequently returned to their parent stock. It is not an unusual thing for bees to act in this way in stormy weather when swarming has been retarded. Sometimes several queens come out with a cast, and this splits up into several clusters. Sometimes bees leave the hive with a queen when she goes for her wedding flight, and may cluster, but when they find the queen has returned they also go back to their hive. 5. They need not necessarily swarm again, because if bees are prevented for any reason from swarming they usually kill all queens but one.

AMATEUR (Pinner).—*Swarm Leaving Hive.*—1. You probably did not secure the queen with the swarm, or she may have been lost, which would account for the bees leaving the hive. As you had a cast ten days later the old queen evidently did not return. 2. Young queens utter a shrill piping sound in their attempts to destroy rivals.

W. P. (Carlisle).—*Bees Robbing Skep.*—1. There is no sign of disease, and the brood appears healthy and almost ready to hatch. The dead bees sent are all drones. The stock has probably lost its queen and is being robbed by the neighbouring colony. When hives become weak they rarely resist this sort of robbing, and frequently assist the robbers in carrying away the stores. 2. We would put the sections on to another strong hive. 3. There may not be any disease in the skep, but you must watch the behaviour of the bees.

G. F. A. (Taunton).—*Recognising Queens.*—If you unite a first swarm with an established stock, not the parent, there is no means of recognising which of the queens has been killed, as both would most likely be old queens of a previous year. We can only say that the queen

you send is a fertilised one, probably of last season's raising.

H. E. W. (Sevenoaks).—*Age of Queen.*—The queen sent appears to be a fertilised one, but she was so dry and hard that it was with difficulty that the spermatheca could be examined.

J. C. (Sturminster Newton).—*Young Drones Cast Out.*—1. There may be two reasons for this, either shortness of stores, or no further need for drones, the bees having given up all intention of swarming. It is not unusual in bad weather for bees to act in this way, as they seem to realise that at such times drones consume food required by brood. 2. The combs have probably been joined together owing to the foundation having given way. It can only be prevented by securely fixing and wiring foundation. 3. Blackmore Vale is a good honey-producing district.

READER (Sheffield).—*Making Artificial Swarm.*—You can make an artificial swarm by removing the queen and a certain number of bees and putting them into the hive fitted with drawn-out combs, which you can place on the stand of the stock and remove this to another place. Take care to leave enough bees in the old hive to care for the brood and raise another queen.

F. H. F. (Gloucester).—*Swarming and "W.B.C." Hive.*—Your colony is evidently a very strong one and has worked well. Probably in an ordinary season the means you adopted would have succeeded in preventing swarming, but the unusual close and thundery weather we have been having has caused many colonies to swarm which in ordinary seasons would have worked contentedly in the supers. There are not many districts in which the "W.B.C." hive is too small, but there is no reason why in such places hives with thirteen, or even fifteen, frames should not be used. The only other steps you could have taken to prevent the swarming would have been to have removed all the combs from the brood-box and to have given frames of comb-foundation. The irascibility of the parent stock is no doubt due to the weather.

W. A. C. (Castle Cary).—*Dwindling Stock.*—1. The comb contains only drone-brood, showing that the queen either is unfertilised or has become a drone-breeder. 2. The stock has dwindled on account of the failure of the queen to lay fertilised eggs and thus produce workers. 3. The drones are small because they are reared in worker-cells. 4. The queen cannot be fertile now or she would not lay all drone-eggs. 5. Drones. 6. If there are only enough bees to cover one frame, they can hardly properly attend to a frame of brood from a strong stock unless you give them more bees so as to prevent the brood from getting chilled.

J. O. J. (Ross).—*Supering Hive.*—1. If your bees only covered five frames in May, they were evidently not strong enough to go into supers. The bees will not go up into sections until they are cramped for room below, and will do so when they find the need for more storage room. 2. The wax-moth you saw has probably laid eggs in some crevice, and you can do nothing until you find the larvæ later on. It is not likely to do much harm just now.

G. F. Y. (St. Davids).—*Queen-cells above Excluder.*—If you have driven the bees and have secured the queen in the hive below, you had better destroy the queen-cells above excluder, if the workers have not done so already. Should the queens hatch out they will probably be destroyed if the colony already has a fertile queen.

W. H. P. (Carlisle).—*Ripening Honey.*—1. You need not keep fire going all night, as it will ripen with a lower temperature if allowed to stand longer. 2. You can draw it off from the bottom and must judge by the consistency. When the honey begins to come out too liquid, stop and put more honey into the ripener. You can leave the thin honey to draw off at the end of the season, as a good deal of what is too liquid at first becomes thicker as it ripens. 3. We are pleased that you find the B.B.J. so useful to you.

STARTER (Cilgerran, R.S.O.).—*Beginning Bee-keeping.*—You can transfer your skep in August if you wish, but the best plan would be to allow the bees to transfer themselves next spring. If you drive the bees this autumn you will have to unite other driven lots with them, if you wish them to establish themselves before winter. It certainly answers to drive bees and unite them. You will find full instructions for doing this in "Guide Book," which you should study before you start bee-keeping in this way.

W. B. (Royston).—*Diseased Bees.*—Your bees are suffering from "Isle of Wight disease."

NORTHANTS (Thrapston).—*Section-racks Nailed Down—Name of Plant.*—1. Your best plan is to lever the rack off, or get out the screws. You will then see the condition of the frames and combs inside. 2. It is too late to expect bees to transfer themselves now; the spring is the proper time for this. 3. The plant is orpine or *Sedum telephium.* 4. You will find full instructions for making metheglin, which is

another name for mead, in "Mead, and How to Make It," which can be obtained at this office for 2½d., post free.

L. H. (Cornwall).—*Dead Bees.*—There is nothing to indicate that your bees have died of disease. To diagnose foul brood a specimen of the comb containing brood should be sent. The death of a few bees does not indicate disease, as a certain number die off every day, and are carried out of the hive by the workers.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

LARGE NATURAL SWARM, on eight frames; 12s. 6d.—9, Ashley Park, Montpelier, Bristol. c 32

EXTRACTOR (Guinea, Gearer) FOR SALE, good as new; 18s., or exchange for bees.—HALL, Post Office, Four Oaks. c 33

WANTED, good photographs of Bee-Life.—E. LLOYD, Suburban House, Winchmore Hill. c 17

SECTIONS, Season 1910, wanted to purchase, must be a pale colour and best quality.—T. SMITH AND CO., Cambridge-street, Hyde Park. c 19

SECONDHAND GUINEA EXTRACTOR, 7s. 6d.; secondhand Double "Wells" Hive, 7s. 6d.—HARRISON, Rosslyn House, Westgate, Pickering. c 20

PURE CAMBRIDGESHIRE finest light-coloured Honey, 1910, chiefly Sainfoin and White Clover, f.o.r. 75s. per cwt. Sample 2d.—JOHN CUNNINGHAM, Stetchworth, near Newmarket, Cambs. c 21

3 HIVES, Redshaw's, perfect condition, 7s. 6d. each, or 21s. the lot.—WALLACE, Bramhall, Cheshire. c 22

2 STRONG HEALTHY STOCKS ENGLISH BEES, in Standard Hives, young fertile Queens, Smoker, Veil, Excluders, Wax Extractor, Super Clearer, Shallow Frames, &c. Lot complete, £3 3s.—RISING, 112, Greenwood-road, N.E. c 24

8 BEE-HIVES AND SWARMS, also new Honey Separator, Ripener, and various Bee-appliances for sale.—MRS. TRIMMER, Bentley, Hants. c 25

DEMONSTRATING BEE-TENT WANTED, Hire or Sale, cheap.—Apply, SECRETARY, Hailsham and District B.K. Club, The Mount, Hailsham, Sussex. c 27

PURE ENGLISH HONEY, in bulk or bottles. Wanted, uncapping knife and warmer.—MR. BANHAM, Lilac Cottage, Westmeon, Petersfield. c 30

2 NEW DOVETAIL "W. B. C." HIVES, 11s. 6d. each; 8 Supers, 2s. 6d. each.—GREEN, Bigg House, Arnold, Notts.

Special Prepaid Advertisements.—*Continued.*

WANTED, Honey Extractor and Wax Extractor, good condition and cheap.—Send illustrations or full description to MISS ELLIOTT, Oundle, Northants. c 31

HIVES FOR SALE.—"W. B. C." and "Cottager's" pattern, standard size, painted three coats, perfect condition, Racks of Shallow Frames, Combs drawn out.—HILL, Ashley, Stockbridge, Hants. b 15

6 STRONG WELL-MADE STANDARD FRAME HIVES, 11-in. lifts, nearly new, some never had Bees in, 5s. each.—W. PRINGLE, 2, Commercial-square, Winlaton, Blaydon-on-Tyne. b 10

HONEY, granulated, good flavour, rather dark, in 28-lb. tins, 6d. per lb. Sample, 2d.—C. FIELDER, North Mimms, Hatfield. a 96

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige?—HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free.—Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed.—J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

SECTIONS RECEIVED ON COMMISSION OR BOUGHT FOR CASH.—HONIBEADE CO., 23-5, Moorfields, E.C. c 18

PREPARATION OF HONEY AND WAX FOR SHOW BENCH, 7d.—JOSEPH TINSLEY, Stone, Staffs. c 23

FINE SELECTED 1910 QUEENS, Virgins 1s. 9d., fertiles 3s. 6d.—WELBOURN, Cranswick, Beverley. c 26

SWARMS, guaranteed healthy, despatched per return on receipt of postal order, 14s. 4-lb. lots.—H. WILCOX, Breedon Apiary, Northwood, Olton. c 28

SWARMS.—Pure Italians and Blacks, 4 lb., 10s. each; fertile 1910 Queens, 3s. 6d. Immediate despatch.—WILSON, 30, Burry-road, St. Leonards. c 29

1910 PURE FERTILE QUEENS, Carniolans, Italians, 3s. 6d.; Americans, 4s. 6d.; Swiss, 5s.; Virgins, 1s. 6d.; safe arrival guaranteed. Cash with order.—VOGT, 38, Clementina-road, Leyton, E. c 31

ITALIAN QUEENS, direct from Italy.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," June 9. Abatement till countermanded. Prompt delivery.

QUEENS, 1910.—Special Hybrids, 5s.; Blacks, 4s. 6d.; Virgins, from 2s. 6d.; in introducing cage.—BRICE'S APIARIES, Otford, Kent. b 16

FURNISHED APARTMENTS ON A BEE-FARM, pretty Devonshire village.—W. SOUTHCOTT, Gittisham, Honiton.

ILFRACOMBE (DEVONSHIRE).—Florence Villa, board-residence, splendid position, close sea; moderate.—RICHARDS. a 76

Editorial, Notices, &c.

NOTTS BEE-KEEPERS' ASSOCIATION.

The summer conference of the above Association was held in People's Hall, Nottingham, on Saturday, July 25, when about sixty members and friends from districts pretty well covering the whole county were present.

Up to the time appointed for tea the visitors spent an enjoyable hour examining a large collection of mounted nectar-producing plants, drawings of pollen-grains of same, wire excluders, dummies and dividers, a simple slow-feeder, an apparatus for burning out odd diseased cells, &c.

After tea an excellent paper was read by Dr. T. S. Elliot, of Southwell, on "The Scientific Aspect of Foul Brood," which was profusely illustrated by diagrams, specimens of growths, &c., and lantern-slides. The lecturer pointed out how the organism was cultivated, measured, and defined, and gave instruction as to various means of keeping the disease subdued and at bay, concluding with the hope that ere long the Government would be induced to pass a Bill for the suppression of foul brood and other diseases of bees.

Mr. Darrington, in proposing a vote of thanks to Dr. Elliot, said how very instructive, lucid, and interesting his paper had been. The secretary (Mr. G. Hayes) gave a description of twenty-five nectar-producing plants and their pollens, illustrated by photo-micrographic slides of the latter and photo slides of the plants. Mr. Hayes' extremely interesting paper was listened to with interest and pleasure by all present, a most successful meeting being brought to a close at about 9 p.m.

AMONG THE BEES.

BY D. M. MACDONALD, BANFF.

FORMING NUCLEI.

In answer to several urgent requests, I will deal more fully with the formation of these small lots of bees. Rather than give a large selection of the various plans followed, I think it best to pick out a few of the very best, in order that readers may have a choice of some of the newest and most up-to-date plans.

Mr. Doolittle's favourite plan, and one he recommends because there is no confining of bees, is as follows: Make a colony queenless, and as soon as the cells are sealed over, or, better, when they are within a day or two of hatching, convey one to each frame by pushing the base of the cell into the comb. On the next day carry each frame with its queen-cell on it to a hive where you want a nucleus to be. Place a frame of honey alongside of it in the hive, contracting by dummies to suit the size of the colony. Now, from any other hive take a frame of brood without the bees and place it in the combless hive. This frame with brood and cell will be taken care of by the flying bees when they return from the fields. In this way from five to ten nuclei can be made from one colony. He maintains that, while the bees shifted into the new hives would not stay with a strange virgin queen, they will stay with one of their own cells.

Dr. Miller takes his bees and combs from any colony which can afford it. Each nucleus is put upon a stand of its own, and the entrances are at once plugged up with leaves so that no bees can get out. The entrances may be left closed until the shrinking of the leaves allows the bees to make their way out; but if he desires to liberate them after twenty-four hours he pounds on the hive to rouse the bees and make them mark their location upon emerging. Queenless bees are much better at staying where they are put, but he counts on very few bees returning after being confined twenty-four hours or longer—say forty-eight hours. It is not necessary, he says, to do anything more than to let a nucleus stand without any help in a fair season, if it can stand long enough.

The Doctor also makes his increase by taking small lots of bees to his out-apiaries. His ten-frame hive is carried, each frame provided with a queen-cell, from the home-apiary, and the ten frames put into ten different hives. Of course, every bee will stay where it is put. He is not content with a single frame, however, because he carries with him a second hive rendered queenless, and from this gives a second frame containing bees, brood, and honey. These are all expected to work up into independent stocks.

Mr. Sladen, of Dover, whose book on "Queen-Rearing in England" should be in the hands of every bee-keeper possessing a dozen stocks, has invented a small two-frame nucleus hive. Each frame is hinged in the centre in order that when required the two frames will make one full-sized ordinary standard frame. Each hive can be divided by a small dummy, and can take two nuclei separated by the division-board. He funnels the bees into each of these miniature hives, and supplies them with a ripe queen-cell or a newly-hatched virgin.

For the beginner, rearing queens from cells or larvæ from prepared cups or otherwise is not to be recommended; but he can in general get sufficient queen-cells from swarmed hives, any queenless lots, or from colonies superseding their queens. In this way the nuclei formed can each be expedited by being supplied from one of these, instead of waiting until they themselves build out cells and rear young

virgins. If, through baby nuclei or otherwise, we can secure fertilised queens to head them, we advance them still further along the high road of success. A start should not be made at too early a date, and in bad weather provision should be made for giving a steady food supply. Nuclei should be started fairly strong in bees to make them a success.

The following interesting procedure is followed at Messrs. Root's queen-rearing yard: From some of their out-apiaries they take home so many pounds of bees. They have small twin-nuclei boxes containing four frames and a dummy. The operator jars the receptacle containing the bees so that all fall to the bottom, and then wets them with a spray. He then scoops up about 4 oz. of bees (rather over 1000) and dumps them into one of the compartments, repeating the process in the other. An attendant drops down a virgin queen previously dipped in honey or syrup. Both divisions are now covered up with an enamel cloth, and, further, warmly wrapped up. They are retained in the operating-room for forty-eight hours, and then placed on their respective stands. The entrances are opened at night, a frame-feeder at the side. These small twin-nuclei serve the purpose only of mating. When the queens begin to lay they are taken out and given to other hives to replace effete or undesirable queens, or they are given to already established nuclei on standard combs. After taking out the young fertile queen it is preferred to give a new nearly ripe queen-cell instead of a young virgin. With a queen-cell the bees accept the new mother when she issues, but with a virgin they find the bees at times resent her introduction.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

INDUCING BEES TO WORK IN SUPERS.

BEES PERFORATING BEANS.

[7850.] Last year I wrote you an account of my experiences as a beginner at bee-keeping, and asked some questions, which you kindly answered. I did not know you had printed my letter until I received one from a gentleman who had seen it in the *Record*, and with whom I have sustained a correspondence varied by occasional visits, and from whose experience I have been generously allowed to draw upon to much advantage.

Now that the honey-flow is on us again, perhaps it would interest you to hear of my further progress in the craft, and at the same time I may perhaps be allowed to have your opinion again upon some little items, although I must say the "Guide Book" is so comprehensive that one feels perhaps one is a little dull and has missed some of the point of the instructions.

My two stocks wintered excellently, the old one coming out most remarkably strong and with such an ample supply of stores that I stimulated by uncapping a few cells at a time. By the time the apples were in bloom there was an enormous population, and I put on a super. The blossom was somewhat of a failure, however, the crab-trees having not a tithe of the bloom they showed in 1909, two trees near me which last year were simply one mass of pink and white having not a solitary flower upon them.

The bees did not go into the super until the fruit blossoms were over, and, notwithstanding the fact that there have been plenty of bees in it now for a month, there does not appear to be any honey stored. I have packed it up tight from the commencement, and I am quite sure no warmth escapes from it, and in fact at 4.30 one cool morning there were plenty of bees there. Now, sir, how do you account for this? Is it owing to the combs being wide-spaced and having a great depth of honey-cell? I am referring to the brood-chamber now, of course. I have wondered whether, this being so, there is still plenty of room below for storage; and if this is in your opinion the reason, perhaps you would kindly suggest a remedy for immediate use, as I have had to stand a good deal of chaff about these bees and the dearth of honey, and I do not want to see empty supers at the end of the honey-flow. The other stock did not seem to increase much, so last week I examined it and found a number of queen-cells (capped, in one instance), so I thought it wise to make a swarm. This I did by taking out a frame with queen, a frame of honey and young brood, and with these and a spare comb started the new hive, which, of course, I put in the place of the old stock. Both stocks are busy drawing out the comb, the swarm being aided with a bottle-feeder.

I notice a correspondent (No. 7840, page 235) mentions the holes in bean-flowers I noticed this last year, and made it my business to find out what made them, and a little watching soon settled the point. I saw a species of *Apathus* go to the base of a virgin flower and with a quick tear-

ing motion of the jaws break the hole.

It will occur to you that this genus does not rear its young, and it seems to me therefore a very satisfactory explanation of the reason for the hole being made, as of course pollen is not wanted. I intend to follow this point up as far as possible, but the beans are over now. So far I have not seen the larger bees (*Bombus*) making a hole, although both they and the *Apis* take advantage of it.

The clover is in full bloom here now, but so far I have not seen the bees at it. I fancy there is something very attractive in some gardens down the hill, as the line of flight is nearly always in that direction.

The enclosed photo will give some idea of my apiary, which I have arranged under a kind of pergola. The top does not show in this print. Up the sides I am training loganberries, and I think, as well as being very convenient, it will form an unusual decorative feature of the garden. With my best wishes to all fellow bee-keepers. May one and all have a great meed of success.—H. G. MACE, Essex.

[There are different reasons why bees do not go up to work in supers. There may not be sufficient bees, or there may be room in the lower story for storing all the honey that is coming in. If the queen does not keep the brood-nest well supplied with eggs the bees find room there for storage of honey, especially at a time when the honey-flow is not abundant. In a strong colony, where there are plenty of bees and a prolific queen, bees will begin working in supers as soon as they can depend on a sufficient flow of nectar. Fruit-blossoms usually are only just sufficient to stimulate bees into activity, and, except in some districts, do not provide enough for storage in supers, the bulk being used in brood-rearing. The main flow usually comes later, when clover and sainfoin come into bloom, and if the colonies are not ready and anxious to work in supers at such a time the number of frames in brood-chamber can be reduced by removing the outer ones, their place being taken by dummies. For this purpose the dummies are simply frames with thin boards tacked on each side. They hang in the hive, and occupy the same space as a comb. Colonies may sometimes be contracted to five or six combs, but these should be well filled with brood. In this way the bees, finding no room to store honey below, are forced to go into supers, though even this will not cause them to store there unless there is a good flow of nectar. The greatest attraction that can be placed in the supers is drawn-out comb, and this frequently entices bees into them, even when they would not enter a super fitted with foundation. We regret that the charming photograph you send is not clear enough for reproduction. —ED.]

ROSS-SHIRE NOTES.

A GOOD START.

[7851.] The months of May and June were very favourable for bees here, and although early forage is scarce in the North bees gathered sufficient for their own needs and stored some surplus as well. The strongest stocks were supered with combed sections on June 15, and on taking a peep into them last week I was surprised to find the first racks filled and partly sealed over. A second super was placed on top, and readily taken to in all cases. We seldom have sections filled so early. July is our best month for honey, and in our "record" season there was no surplus until the third week of the month. Things are quiet in the apiary just now, daily heavy rains putting a stop to honey-gathering. However, with clover now in full bloom there should be a heavy flow of nectar when the sunshine comes again.

Supering.—I note our Editor (page 259) does not agree with "D. M. M." *re* putting the empty rack on top always. Here in the North we want two crops from the July honey-flow, the one of finished clover sections, the other merely drawn combs for the heather. We sometimes have strong stocks occupying five or six racks of sections. Now, supposing we always placed the empty super next the brood while extending, and, as frequently happens, a break in the weather cut the forage short, we should get few finished sections and have a lot of half-finished ones to run through the extractor.

Section-nuclei. — Has this system perished along with its originator? I find the baby-nucleus both interesting and useful. If confined in a warm place for a few days there is no desertion, and the queen mates all right from a couple of sections.—J. M. ELLIS, Ussie Valley, July 2.

ISLE OF WIGHT DISEASE.

[7852.] Has it occurred to the Board of Agriculture to look for the cause of the Isle of Wight disease in a recently imported weed? Many features in the case point to poison. First, all efforts to reintroduce bees into the island seem to have failed. This points to some permanent cause connected with the place and of recent origin. Secondly, the disease seems to follow the course of valleys. Thirdly, it is more to be dreaded at certain seasons of the year than at others.

Might I venture to suggest that the services of a naturalist should be employed to discover whether or no a hitherto unknown plant has been introduced into the island, as the whitlow-pepperwort was introduced a hundred years ago in some straw and litter?—F. S., Hants.

'MID PIKE AND FELL.

[7353.] "Eh! but it's bonnie weather noo. Happen a soop o' rain. Bees doin' gaily weel down in field-kale yon, wi' clover, gay likely, we shall have a champion harvest." My southron ear scarcely notices now the rudeness of the North Country speech. Its manly robustness suits well the stalwart men and the buxom maids and matrons whose dialect it is.

True-hearted women and brave, honest men.

It is market day in any of the border towns. Come with me among the crowd. These sturdy yeomen, bronzed of face, clean built, and powerful of limb—are not they worthy sons of their sires of old, who, at the beacon's glare, were compelled by the tenure on which they held their land to assemble "properly equipped for forty days' service, nag or foot"? Right well did they repay the courtesies of their neighbours "o'er the border." It is interesting to read in the records of the Courts of the Lords Wardens of the Marches the curiously worded oaths administered to the jurors for "excusing the bill," for "fouling the bill," for so the indictments were called. History has it how Walter Scott, of Brankholme (in Scotland) sued in these Courts Willie Graham, of the Rosetrees, together with Richard Lowther and Alexander Hume, of Hulton Hall (in England), for "attempts committed on the Marches of Liddesdale." And the records of these Courts declare that the damages occasioned by the English raiders were £31,900 in excess of the Scottish devastations.

But veritably the sword has turned into the ploughshare. Needless now are fortified farmhouses, with high-walled yards into which the cattle might be driven when "lifters" were about. Oxen and lambs browse peacefully in the rich meadows. The corn grows in the fields, tinting the browside and the landscape with its golden harvest brown. Teeming are the orchards, and hard by the homestead long-throated chanticleer crows forth his defiance. In the old square towered Norman built churches are the monuments of those whose duty it was to keep watch and ward over the borders.

Have those long years of strife and struggle, when each man knew not if he spoke to an enemy or a friend, left a stamp on the character of this people? Cautious to a fault, he needs must be an early riser who would outwit them in a bargain. Early in my visit a sale by auction, which included some hives of bees, attracted my attention. The auctioneer was a typical man of the county Westmorland, grey as to beard, and broad as to accent. Too wise to give a false description, everything he sold he declared "a first-class article of its kind." Therefore, chairs and tables, rheumatic and fractured in their joints, and blankets and sheets, of which you might count the warp and the weft, were all "first class of their kind." And the bees. One hive I knew to be tenanted by a fertile worker, and of another the queen was in the last stage of senile decay. Yet they were "first-class hives of bees *of their kind*." I thought them dear at half a crown, at which I started the bidding, and happily was not the purchaser. But the afternoon had not been without interest and amusement *of its kind*.

Those days of my tour in early spring were fearful. Snow, snow, eternal snow, and winds piercing and bitter. Full many a stock succumbed during one fell fortnight. Saved during the winter months, and stimulated by the previous few days of fine weather, another cake of candy, another few pounds of syrup, would have brought them through. It is sad to open a hive to find its tenants in heaps on the floor. Work among the bees was out of the question. To have a chat on bee matters (in Westmorland dialect "a crack") Ash Fell had to be mounted, and it took an hour or more to ascend—you descend in ten minutes. Then it was that the awful majesty of a snowstorm in the mountains could be seen, hurtling over yonder western hills in the wind's eye, spreading its gigantic arms and limbs on either side, a fiend, as it were, escaped from imprisonment. See, it comes hissing, lashing in its passage the early verdure of the trees. You crouch under the lee of a stone wall. Swiftly it envelopes you; stinging hail and blinding snowflake. The distant hills in the path of the storm have vanished, the near ones are white. Yet still overhead, whirling and curling onwards, it scourges, until even its own fierceness causes its exhaustion. Oh! it is a marvellous sight to those who love Nature even in her most savage moods, grand and glorious. The verdure of spring, the more mature foliage of summer, the ripeness of autumn, all are beautiful. But in winter, when life is dormant, taking that long night's rest, which all created things must have, then Nature shows that she has still another aspect—stern and severe, perhaps, but still beautiful.—J. Smallwood, Hendon.

CHLORIDE OF LIME AND FOUL BROOD.

[7854.] In several issues of the B.B.J. last year there were references made to using chloride of lime as a remedy for foul brood. In some cases difficulties were found, and during last year, having a bad outbreak of foul brood in one of my hives, I made use of it with very satisfactory results. To use it and change it frequently in the usual way meant often opening the hives, and as this seemed to me to have its own objections, I devised a plan of making new floorboards and adapting my old ones in such a way that I can at any time of the day or night supply disinfectant without the bees knowing I am doing it. Should the amount used be too great, and disturb the bees, it can be immediately withdrawn. If you would care to have a short paper from me about it I shall be pleased to write one, as it is a practical method, and will prevent a great deal of over-manipulating and disturbance.—CHAS. J. ASHWORTH.

[We shall be glad to have your experience with chloride of lime, and the way you have used it explained.—ED.]

Queries and Replies.

[4019.] *Prevention of Swarming.*—I should like the benefit of your advice in the following matters:—1. I have never yet been able to prevent swarming. My bees are kept in "W. B. C." hives, and this spring a strong stock (last year's queen) was supered with a section-rack late in May. At the same time I propped up the body-box and outer case with small wedges so as to give free ventilation, but the bees swarmed on June 10. Another stock, treated similarly, swarmed on Saturday, the 25th ult. As I live some distance from my bee-garden it was only by good luck that the swarms were observed and hived. 1. Can you suggest any improvement on my method of management? I do not desire increase of stocks, but honey; and I thought I had given the bees plenty of room in advance of their requirements. They started work in sections, and almost filled one section only, leaving the other sections in rack practically untouched. 2. Drones are usually held up as examples of incorrigible idleness. Am I right in assuming that it is not lack of inclination that prevents them from working, but the fact that they are not provided with the necessary organs for gathering nectar? Will they (as I have seen it asserted) starve rather than feed themselves, or do they help themselves to honey in the hive? 3. What is the object of having the two thin strips of wood, 16½ in. by ⅜ in., in the body box of a "W. B. C." hive, and how thick ought they to be? Is it to space the end comb at the correct distance from hive-wall?—J. W. P., Whitehaven.

REPLY.—1. The position in which the hives are placed also counts in the prevention of swarming; for instance, they should not stand under a south wall or where the sun shines fiercely down upon them. It is more difficult to prevent swarming when working for sections than when working with shallow frames. If the hives are much exposed to the sun, give temporary shade during hot weather by erecting a framework on which raffia matting can be laid. 2. Nature ordains that drones are brought into existence for the perpetuation of the race only, and this is their sole work. They can feed themselves if necessity arises, but are usually fed by the workers. 3. Yes; they should be about $\frac{3}{16}$ in. thick.

[4020.] *Artificial Swarming.*—I have one hive, in which the bees are working in a rack of sections and two supers of shallow frames, there being ten frames well filled with brood in the brood box. The sections and upper rack of frames are nearly ready to come off, and I am anxious to make some increase, although there is no sign of preparation for swarming. I propose to make an artificial swarm, giving the swarm the old stand and the supers, and when the queen cells are ripe to divide the stock into two. I shall be very much obliged if you will tell me: 1. How late can I safely leave this for the stocks to build up before winter? 2. Should I give larvæ in artificial queen cells, or can the bees be trusted to select larvæ young enough when they are not swarming naturally? 3. Would it be advisable to make four nuclei and then unite as required to allow for mishaps in fertilisation? 4. What is the object of lugs 1½ in. long on frames? It seems to me that lugs ¾ in. long would very much simplify hive construction, particularly with hives made on the "W. B. C." principle.—MEDICO, Notts.

REPLY.—1. It should be done at once. 2. If after being queenless twenty-four hours you enlarge a few of the cells containing eggs and destroy all other queen cells made by the bees, there will be no risk of failure. 3. No; this would be dividing up too much, and would only be safe in experienced hands. 4. The 1½ in. lug is found most convenient to enable the frames to be manipulated with comfort. A 15 in. top bar was tried some years ago, but was discarded, as it did not give sufficient room to hold the frames.

[4021.] *Swarming Vagaries.*—I am a regular reader of your interesting paper, and have received a lot of valuable information from it. I started bee-keeping last summer with one hive, the stock wintered well, and on the 19th ult. I had a strong swarm from it. I got the bees into a skep, which I inverted on a sheet, and they settled down inside for about an hour; then they all left and clustered on a tree near. They repeated this three times; then I got them hived and put a feeder on, having given them eight frames of foundation. I left home on the 20th ult. about midday, and they seemed quite settled in the new hive, but I have since heard that on the 21st they all left the hive again and went back to the old one, where they have remained. I should be glad to know if you can tell me the reason of their doing this. I may say that when hiving them I saw there was a queen amongst them.—J. W. G., Tralee.

Reply.—It is rather unusual for bees to do this. Are you quite sure the swarm went back and did not abscond? If they did go back, most probably it was caused by the queen being killed or lost during the last time they were hived. Occasionally a swarm will forsake the hive they are put into. This may be caused through their being hived during the heat of the day, or if the hive has been disinfected and the smell still remains.

[4022.] *A Beginner's Queries.*—I shall be very grateful for answers to the following:—1. Does food made from No. 5 recipe in "Guide Book" keep indefinitely in corked bottles? 2. If the bees store this syrup, but do not seal it over, how should I remove it for the winter, having no extractor? 3. By what date should it be sealed over or removed? 4. On a reasonably warm, sunny day, does lifting out the frames for examination risk chilling the brood? 5. What is a reasonable length of time for a frame to be kept out for examination? 6. Does examination upset the bees and throw back their work? 7. Is it a good or bad sign for numbers of bees to be in the air in front of the hive apparently doing nothing, many, of course, coming and going, others persisting in fanning at the entrance? 8. If the combs are heavy with either sealed honey or syrup how many should there be when the stock is packed up for the winter? Should I examine at intervals or leave them till spring? Will the bees starve if there are sealed stores anywhere in the hive? 9. What quantity of candy should be put in when bees are packed up for winter, and is it to be replenished? 10. Will a light shed built round the hives help wintering? 11. The tops of hives are ventilated, but the quilt stops any connection between this ventilation and the bees. How far open should the door be for wintering? 12. Six frames, thickly covered with bees, and containing a little honey or syrup and some brood, were put into one of my hives a week ago, June 25. I have since added two more frames at each end for the bees to draw out: a slight start has been made on one of these; also they take down about half a pint of syrup daily. Given that these conditions are continued for three weeks, can they then be left unattended for a month in safety? 13. How should one hive bees (which I presume are driven) which are sent some distance by train in a box with several frames? I am expecting some more like this, and I ask because the last lot refused to go with the frames into the hive. How should I proceed in opening and transferring to the hive? 14. Do bees need artificial pollen at this time of year? 15. A friend and myself have several times seen much larger bees entering the hive with (apparently) pollen. I take them for drones; but do drones ever do this work? 16. Is white or green paint best for hives, and does new paint harm the bees? Can a hive be painted with bees in it?—Beginner, Isle of Man.

Reply.—1. No. 5 is intended for immediate use and not for storing. 2. It cannot be removed without extracting. Your best plan would be to take away the combs containing the unsealed syrup, as it is not suitable for winter food, No. 6 recipe being the one recommended. 3. End of September. 4. No. 5. Four to five minutes. 6. To a certain extent. 7. It shows they want ventilation. 8. No. 5 recipe must not be used, No. 6 being the right one for winter food. Eight frames well filled would suffice. If in doubt as to the supply of food put on a box of candy with a glass top. You can then easily see when the food is exhausted, and replenish without disturbing the bees. Not if winter passages are given. 9. A 1-lb. or 2-lb. cake. 10. Not if hives are well made. 11. Porous material should be used for quilts. About six inches. 12. Yes. 13. Do it in the evening or early morning and give a frame of brood from one of the other colonies. 14. No. 15. No. 16. White paint is best, but the hives must not be painted when occupied by bees.

Bee-Shows to Come.

July 13 and 14, at Osmaston Park, Derby. Honey Show of the Derbys. B.K.A., held in connection with the Derbyshire Agricultural Society's Show. Several Open Classes for Honey.—Schedules from R. H. Coltman, 49, Station Street, Burton-on-Trent. **Entries closed.**

July 14 and 15, at Spalding.—Honey Show in connection with the Lincs Agricultural Society's Exhibition. Department for honey, hives, &c., under the direction of Lincs. B.K.A. **Entries closed.**

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c. Hon. Sec., Mr. W. Wiltshire, Maindy Schools, Cardiff.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s. Schedules from Geo. Hayes, Mona Street, Beeston, Notts.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. Entry forms from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs. **Entries close July 9.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. **Entries closed.**

July 28, at Middle Wallop, Hants.—In connection with the Horticultural Show. Open classes for Honey: Best 1-lb. Jar Extracted, Best 1-lb. Section. (Entry free.) Schedules from Pryce E. Roberts, Schoolhouse, Nether Wallop, Stockbridge. **Entries close July 21.**

July 28, at Tiverton.—Devon B.K.A. Show of Honey, Bees, Wax, and Appliances, held in connection with the Annual Exhibition of Tiverton and District Agricultural Society. Open Classes, Special Prizes. Schedules from R. W. Furze, Woodbury, R.S.O., Devon. **Entries close July 19.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Melton Park, Melton Constable.—Annual Show of the North Norfolk B.K.A. Four Open Classes, including one for Single 1-lb. Section and one for Single 1-lb. Jar of Honey. Schedules from Miss Leaven, Letheringsett, Holt, Norfolk. **Entries close July 23.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 3 and 4, at Abingdon Park, Northampton.—Honey Show of the Northants B.K.A. Special prizes for open classes, including one for single 1-lb. jar honey. (Entry free.) Judge, Mr. W. Herrod. Schedules from R. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close July 26.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 10, at Wye, Kent.—Kent Honey Show. Four open classes, fifteen open to Kent. Trophy, cup value 3 guineas, two Challenge cups value 6 guineas each, one Challenge cup value 5 guineas, numerous other Special and money prizes. Special classes for Cottagers, also class for Members of Ashford and District Bee-keepers' Association. Schedules from H. C. Chapelow, Hon. Sec., Wye, Kent. **Entries close August 1.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

G. J. (Coleford).—*Description of Foul Brood.*—1. The earliest symptoms of foul brood are so minutely described in the "Guide Book" that we are unable to add much more. You can only tell by the appearance of the larvæ, and not by the position of the eggs. The egg when first laid stands parallel to the sides of the cell, and this position it retains the first day. On the second it is inclined at an angle of 45 deg.; and on the third it assumes a horizontal

position, resting perfectly flat on the base of the cell. 2. The two or three unhatched cells need not necessarily be diseased, and the hatching may have been retarded. Uncap one of the cells and examine contents, and if you find them rotten you may suspect foul brood. 3. We should certainly remove such combs and melt them up, but as you do not wish to destroy them wash out the cells with a tuft of cotton-wool dipped in carbolic acid solution No. 10 in "Guide Book"; afterwards remove the acid with plenty of clean water. 4. When you first discover foul brood follow the instructions on page 179 of "Guide Book."

W. S. H. (West Wratting).—*Extracting Shallow Frames.*—1. If there are eight frames to a super, each should contain from 3½ lb. to 4 lb. of honey when full. If you turned for half an hour and only obtained 1 lb. of honey from two frames and it seemed too thick to run, it must have been too cold, or you do not get sufficient speed in your extractor. The combs should be uncapped and honey extracted as soon as taken from the hive, unless you keep them in a heated room, as cold has a tendency to make honey more dense, and consequently more difficult to extract. 2. If the honey is strained through butter-cloth and allowed to settle and ripen in a deep vessel the cloudiness will disappear in time, unless the honey is contaminated with honey-dew.

J. W. G. (Huddersfield).—*Dark Honey from Skep.*—The honey is from mixed sources, with a small trace of honey-dew, which was probably stored in the skep last season, and has become mixed with the honey obtained this year. The honey is quite fit for either eating or feeding bees.

C. E. B. (Cranford).—*Mouldy Pollen in Combs.*—1. Pollen turns mouldy in winter owing to damp and the colonies not being strong enough to keep it covered. Combs containing such in spring should be removed and melted, but if you do not wish to do this the cells containing the pollen can be scraped down to the midrib. 2. As the queen and bees were without food, it is not surprising that they should have preferred to return to the main brood-nest in front.

J. J. (Wrexham).—*Uncapped Brood-cells.*—This is frequently caused by the wax-moth, and the nearly-matured bees are generally removed by the workers. It is not an indication of foul brood.

Twenty Years' Exhibitor (Derby).—*Awards at Liverpool.*—1. If what you say about coloured water being staged for honey is correct, you should have made the protest in the usual way at the show, where no doubt the matter would have been investigated by the judges. As you did not do so, it is hardly right to bring such an accusation in the way you have done.

F. V. W. (Hartpury).—*Weight of Super.*—The weight of a well-filled shallow frame, if provided with wide ends, is from 3½ lb. to 4 lb. If you wish to know how much honey you obtain, weigh the super when you remove it, and when all the combs have been extracted and returned weigh it again, The difference will give you the net weight of honey obtained.

C. J. A. (Heytesbury).—*Removing Ripe Honey, &c.*—1. Honey can be removed from the hive as soon as all the cells are capped over. It need not be left on the hive to ripen. This applies to supers and also the brood-chamber. 2. Sections for show must be glazed, and for commercial purposes it depends on the demand. Some dealers require them glazed; others take them in crates unglazed. 3. There is no objection to the use of "Izal," but there are other remedies quite as efficient. 4. Much will depend on the judgment of the bee-keeper, and from 40 deg. to 50 deg. would be safe with one, while another might cause brood to become chilled at even a higher temperature by injudicious manipulation. If only one or two frames are uncovered and the lifts kept on and providing protection, a frame of foundation can be safely inserted at a lower temperature, in a few seconds, but you must bear in mind that when bees are disturbed, unless they are able to fly freely, they are likely to have dysentery.

A. H. (Patcham).—*Treating Swarms.*—If you give the swarm the frames of brood you put it in the same condition as it was in before it swarmed, and the bees would swarm again for the same reason. Carry out the instructions given on page 250.

G. M. O. (Hanwell).—*Bees Deserting Hive.*—Are you sure that the queen was fertilised? If not, it is possible that she left the swarm for fertilisation, and the other bees followed her, or that she had been injured in some way. Finding her on the ground running towards the hive would lead us to the latter conclusion.

A. W. R. (Poole).—*Fertile Workers.*—A fertile worker frequently lays several eggs in single cells here and there, whilst most adjoining ones are empty and unused. A prolific fertile queen will sometimes deposit several eggs in cells in regular compact patches which can readily be distinguished from those laid by a fertile worker. When a fer-

tile queen is present in the hive the bees rarely tolerate a fertile worker.

G. M. A. (Bardon Mill).—*Failure to Obtain Surplus.*—1. As your colony is weak, you would do well to strengthen it by the addition of a swarm, and removing the old queen. 2. You can only get swarms from strong colonies at the proper time, but last year was a bad one for swarms, and the weather prevented many hives even in good condition from swarming. 3. We do not think the hexagon hives have anything to do with the non-swarming, but you will find the movable frame-hive more easily managed. 4. We have not heard before of sugar being soaked in tea as winter food for bees, but should think the syrup made in the way recommended in "Guide Book" best, it being the nearest approach to honey in composition. 5. We note that you are in favour of foul-brood legislation.

G. R. (St. Albans).—*Ailing Bees.*—The bees sent appear to be suffering from dysentery, the bowel being congested and filled with undigested pollen, caused by malnutrition.

W. H. W. (Harlington).—*Dealing with Foul Brood.*—We shall be pleased to have your experience of how you extirpated the disease.

Theodosia (South Wales).—*Supposed Loss of Queen.*—1. The bee you send is a drone, not a queen; therefore all is well with the stock. 2. Lift up the deal box and put the shallow-frame super underneath, as this will give you more room near the brood-nest and prevent swarming. 3. The only way to deal with a vicious stock is to re-queen it in the autumn with a queen from a strain with a good disposition, such as Carniolans. Our advertisement pages will inform you where you can obtain a queen.

Cornubia (Cornwall). — *Exhibiting at Shows.*—Under the circumstances only one exhibit in each class can be made, as obviously both exhibits would be from the same apiary, which means the place where the bees are kept.

Infected (North Devon).—*Disinfecting Combs.*—1. The infected cells should be cut out and the combs disinfected with formalin. 2. Formalin is the better, but you might use both it and soluble phenyle to make quite sure. 3. Soak the metal ends in methylated spirit to remove the propolis. They should then be washed in formalin. 4. If properly treated you should not find disease in September. When removing supers examine the hive carefully for traces of disease, and if found to be still present treat again without delay.

A. M. M. H. (Berwick).—The insect sent is a virgin queen.

Beginner (Wellington).—*Queen Cast Out.* The queen is a very old one, and has been deposed by the bees for this reason.

H. N. (Essex).—*Suspected Disease.*—The bees have evidently died of starvation, and the stock should be provided with food at once.

C. M. R. (Ilfracombe).—*Queen Found Dead.*—The queen is a fertile one, and we should say she has been balled, probably through manipulating. Her wings are ragged, and she has the appearance of being an old queen which has been superseded by the bees.

H. F. (Walsall).—*Queen Lost in Transit.* —1. The queen was evidently lost in transit, and the bees are re-queening themselves. 2. There is no need to do this, as the queen-cells in the hive will furnish a new queen. 3. Yes; feeding with syrup will help them.

Honey Samples.

Vadis (Derby).—The honey is commencing to granulate. It is of fairly good flavour, though rather thin in consistency. Gathered mainly from charlock.

S. C. (Crewe).—Sample is a nice flavoured granulated honey, its chief defect being the coarse granulation.

E. A. B. (Petersfield).—The honey is a very nice sample from clover, colour and flavour being particularly good.

Suspected Combs.

G. G. (Foots Cray).—There are no larvæ in piece of comb, the brood in cells being almost ready to hatch. There appears to be no disease so far as we can judge, and the sample sent has no bad smell such as you describe. Send a piece containing young brood if possible.

V. D. (Ipswich).—Comb is affected with foul brood. The stock, being so weak, together with combs, quilts, &c., should be promptly destroyed and the hive disinfected.

Smoker (Chesterfield).—The piece of comb shows virulent foul brood, and should be attended to without delay. Be careful to avoid robbing by bees from other hives. Operate in the evening when bees have ceased flying, and if the stock is not worth saving you had better suffocate the bees in this way:—Dig a hole, in which place some burning sulphur, lift the diseased stock from the floorboard, and put it over the hole, and the bees will drop from the frames. The combs, quilts, dead bees, and other débris can be burnt, and the hive thoroughly disinfected. The ground also on which the diseased stock was located should be disinfected.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½ in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

HIVE. Taylor's dovetailed, new, painted four coats, roof covered oilcloth, painted, 10s. 6d. —F. B. MERCER, Sidmouth. c 41

HONEY EXTRACTOR, takes one Standard or Shallow Frame, good as new. Price 5s. 6d.— F. C. HOLMES, Red Lane, Welshpool, Wales. c 45

150 LB. GRANULATED 1909 HONEY, in tins, cheap, slightly tainted with Honeydew. What offers?—A. HUMPHREYS-OWEN, Glansevern, Berriew, Montgomeryshire. c 48

RUN HONEY WANTED, in bulk. Send sample and price.—BLAKE, 5, St. Luke's-road, Maidenhead. c 46

MAN WANTS SITUATION TO LOOK AFTER BEES, certificated, can make Hives, assist gardener; abstainer.—SHORT, Downside Inn, Shepton Mallet. c 47

FOR SALE, Apiary, six strong Stocks (not swarms), three empty Hives, Section Racks, Sections, Frames, Honey Press, Comb (Taylor's make), and other articles too numerous for print, guaranteed healthy. Inspection invited by appointment. Hives can remain until September, and will receive best attention.—J. ELLWOOD, Row Foot, Arnstable, Armathwaite, Cumberland. c 42

WANTED, Sections and Extracted Honey.—State quantity and best price.—HUTCHISON, Lowood, Lenzie. c 43

WANTED, Extractor and Ripener. Cash, or exchange Martini .22 rifle, in splendid condition, very accurate aperture sights.—FREEMAN, Otford, Kent. c 42

DRAWN-OUT SHALLOW FRAMES, 3s. 9d. per doz.; Racks, 1s. each.—HEWETT'S APIARY, Alton, Hants. c 36

GOOD EXTRACTOR, takes 3 Combs at once, 13s.—HEATON, Methwold, Norfolk. c 34

COLUMBIA GRAPHOPHONE, with recorder and reproducer, and 40 records, in good condition. Will take in exchange six good Swarms.—J. W. AVERY, Longbridge, Deverill, Warminster. c 35

NEW PAINTED "W.B.C." HIVE, fitted Excluder, lift, ten full brood foundations, and full Section Rack. Half price, 15s.—LEICESTER, Idridgehay, Derby. c 37

4 DOZEN SAINFOIN SECTIONS, clean, well filled, 9s. dozen; 23 lb. Extracted, 16s.— NORTH, Cressing, Braintree, Essex. c 38

4 SECTION RACKS, Sections fitted with Foundation, 2s. each, lot 6s.—BURT, Long Rock, Cornwall. c 51

8 BEE-HIVES AND SWARMS, also new Honey Separator, Ripener, and various Bee-appliances for sale.—MRS. TRIMMER, Bentley, Hants. c 25

Special Prepaid Advertisements.—*Continued.*

EXTRACTOR (Guinea, Gearer) FOR SALE, good as new; 18s., or exchange for bees.— HALL, Post Office, Four Oaks. c 33

3 HIVES, Redshaw's, perfect condition, 7s. 6d. each, or 21s. the lot.—WALLACE, Bramhall, Cheshire. c 22

SMART FOX TERRIER DOG, 3½ months, sell 15s., or exchange good Extractor. — WILLIAMS, Hemel Hempstead. c 50

6 STRONG WELL-MADE STANDARD FRAME HIVES, 11-in. lifts, nearly new, some never had Bees in, 5s. each.—W. PRINGLE, 2, Commercial-square, Winlaton, Blaydon-on-Tyne. b 10

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

MY SWARMS IN JULY DO BETTER THAN THOSE SOLD BY SOME IN JUNE. Strong, healthy Swarm, travelling box, free for 9s. 11d.— MULLIS, Egerton, Kent. c 45

"DOOLITTLE" STRAIN OF QUEENS.—Virgins, 1s. 6d., ready; book fertiles, 5s., for delivery in turn. One of the many satisfied customers writes: "In past years I have had a few from you, both Virgins and fertiles, and they invariably did well."—D. G. TAYLOR, Ilminster. c 40

GUARANTEED HEALTHY, 4-frame Nuclei, fertile Queen (strong), 14s. 6d.; Virgin Queens, 2s.; fertile Queens, 4s. 6d.; order early; all from noted Cheshire Apiary.—MERE FARM APIARY, Nether Alderley, Chelford. c 49

SECTIONS RECEIVED ON COMMISSION OR BOUGHT FOR CASH.—HONIELADE CO., 23-5, Moorfields, E.C. c 51

PREPARATION OF HONEY AND WAX FOR SHOW BENCH, 7d.—JOSEPH TINSLEY, Stone, Staffs. c 23

FINE SELECTED 1910 QUEENS, Virgins 1s. 9d., fertiles 3s. 6d.—WELBOURN, Cranswick, Beverley. c 26

ITALIAN QUEENS, direct from Italy.—Address, E. PENNA, Bologna, Italy. See advertisement in "British Bee Journal," June 9. Abatement till countermanded. Prompt delivery.

QUEENS, 1910.—Special Hybrids, 5s.; Blacks, 4s. 6d.; Virgins, from 2s. 6d.; in introducing cage.—BRICE'S APIARIES, Otford, Kent. b 16

FURNISHED APARTMENTS ON A BEE-FARM. pretty Devonshire village. — W. SOUTHCOTT, Gittisham, Honiton.

ILFRACOMBE (DEVONSHIRE).—Florence Villa, board-residence, splendid position, close sea; moderate.—RICHARDS. a 76

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

FOUL-BROOD LEGISLATION COMMITTEE.

The first meeting of the Foul-Brood Legislation Committee was held at the Royal Show Ground, Liverpool, on June 23. Captain F. Sitwell (Northumberland) presided. Members present: Miss Scott-Walker (Bucks), Messrs. James N. Bold (Lancs), George Hayes (Notts), J. H. Hadfield (Lincs), Joseph Price (Staffs), H. Edwards (Berks), W. Herrod (Beds), Dr. T. S. Elliot (Notts), with the joint hon. secretaries, G. W. Avery (Cumberland) and L. S. Crawshaw (Yorkshire).

Letters of apology were read from General Sir Stanley Edwardes (Kent), Colonel H. J. O. Walker (Devon), Rev. A. D. Downes-Shaw (Norfolk), Messrs. L. Bigg-Wither (Somerset), D. M. Macdonald (Banff), J. Noble-Bower (Warwick), John P. Phillips (Worcester), Ernest Watson (St. Albans), and R. H. Coltman (Derby).

It was decided that a postal ballot should be taken of the bee-keepers in the country, in order to arrive at an estimate of the opinion of the majority of bee-keepers with regard to legislation, and that local associations should be asked to undertake the work of their districts in connection with the committee.

To provide funds for the working expenses of the committee in their efforts to secure legislation, it was decided to ask county and other associations to guarantee such sums as they might be able, and also to ask for private subscriptions to forward the work.

After considerable discussion the draft of a Bill proposed in 1904 was taken as a working basis, and this was discussed clause by clause, alterations being made to include all bee-diseases in the proposed Bill, and to make it compulsory for all counties in England, Scotland, and Wales to put the Bill into force. Appended is a copy of the proposed Bill.

It was left to the hon. secretaries to convene the next meeting of the committee.

A vote of thanks to the chairman brought a successful meeting to a close.

G. W. AVERY }
L. S. CRAWSHAW } *Joint Hon. Secs.*

DRAFT OF A BILL FOR THE BETTER PREVENTION OF BEE-DISEASES.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. In and for the purposes of this Act, the word "infected" means infected with any disease known to affect bees or brood of bees; the word "premises" includes lands and buildings, and the word "hive" includes any receptacle for bees.

2.—(1) Every Local Authority, in England, Scotland, and Wales, empowered to execute the "Diseases of Animals Act, 1894," shall execute and enforce the provisions of this Act within the area of that Authority, and the expression "Local Authority" shall be construed accordingly.

(2) A Local Authority may (without prejudice to their powers of delegation under any other Act) resolve that the provisions of the Fourth Schedule to the "Diseases of Animals Act, 1894," relating to Committees of Local Authorities, shall apply for the purposes of this Act, and thereupon the said provisions shall apply accordingly.

(3) Any expenses incurred by a Local Authority in the execution of this Act shall be defrayed in the same manner as the expenses of such Local Authority under the "Diseases of Animals Act."

3.—(1) For the purpose of executing and enforcing the provisions of this Act, a Local Authority shall authorise a qualified person or qualified persons to exercise the powers exercisable by authorised certificated bee-experts or instructors in bee-keeping under this Act.

(2) Any such authorisation shall be sufficient if made by warrant in the form in the schedule to this Act or in a form to the like effect purporting to be signed by the Clerk of the Local Authority, without being sealed, and shall not be subject to any stamp duty.

(3) Any such warrant shall extend to the whole or to such part as shall be therein specified of the area of the Local Authority, and shall continue in force for the period (not exceeding *five* years) therein limited, but may at any time be revoked by the Local Authority.

4.—(1) An authorised bee-expert or instructor in bee-keeping under this Act shall have the following powers and duties:—

(*a*) He may enter any premises whereon he may have reasonable grounds for supposing that disease exists, or has within fourteen days existed, and may examine any stock or colony of bees, or product of bees, or any hive or appliance for bees which he may find thereon;

(*b*) He shall exercise and perform such powers and duties as may be prescribed by bye-laws of the Local Authority.

(2) Any person who obstructs any authorised bee-expert or instructor in bee-keeping in the exercise of his powers shall

be liable to a fine not exceeding two pounds.

5.—(1) A Local Authority shall make bye-laws—

(*a*) For prescribing the mode of notification of the existence of bee-disease to be given to the Local Authority;

(*b*) For prescribing and enforcing the isolation and treatment of infected stocks or products of bees;

(*c*) For prescribing and regulating the destruction of any infected stock or colony or any infected product of bees, and of any infected hive or appliance for bees, and the payment by the Local Authority of compensation for such destruction, the compensation for any stock or colony of bees not to exceed ten shillings;

(*d*) For prescribing and enforcing the cleanliness and disinfection of hives or other appliances for bees;

(*e*) Generally for the better prevention of bee-diseases.

(2) Such bye-laws may impose penalties not exceeding, in any case, five pounds for any breach of them, and shall be of no effect unless and until confirmed in England, Scotland, and Wales by the Board of Agriculture and Fisheries, but shall not require confirmation by any other authority.

(3) Any bye-law of a Local Authority may be proved by the production of a copy of the bye-law purporting to be certified by the Clerk of the Local Authority as a true copy, and a bye-law so proved shall be taken to have been duly made unless and until the contrary is proved.

6. Where a person having in his charge any bees, hive, or hives has become aware that such bees, hive, or hives are or is infected, he shall forthwith give notice in writing thereof to the Local Authority; and if he fails to give such notice he shall be liable to a fine not exceeding, for the first offence, two pounds; and, for the second or any subsequent offence, five pounds.

7. Any person who knowingly removes from his premises, or sells or disposes of to any other person, any infected bees, or any infected product of bees, or any infected hive or appliance for bees, shall be liable to a fine not exceeding, for the first offence, two pounds; and, for the second or any subsequent offence, five pounds.

8. All offences under this Act, or any bye-law made under this Act, may be prosecuted, and fines may be recovered by the Local Authority, or any bee-expert or instructor in bee-keeping appointed under this Act, in a summary manner as provided by the Summary Jurisdiction Acts.

9. This Act may be cited as "The Bee-Diseases Prevention Act, 1910."

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Useful Swarming Data.—M. A. Bourgeois gives some useful information in *L'Apiculture Nouvelle* in connection with swarming. He says:—

In the first swarm:

	Days
The first workers leave the cell in	22
The new workers commence gathering in..	37

In the first swarm the newly hatched workers will leave their cells on the twenty-second day, and will become foragers towards the thirty-seventh day from the time the swarm was hived.

In the second swarm:

	Days
Fertilisation of young queen in	6
First eggs laid	8
Sealing of the brood cells	17
Emerging of first workers	29
Young workers leaving hive	44

In the second swarm young workers will appear towards the twenty-ninth day, and will become foragers from the forty-fourth day after hiving the swarm.

In the parent hive:

	Days
The most forward queen cell	9 to 10
Queen will emerge in	6
Wedding flight will take place	13
Queen commences laying	15
Sealing over of first cells	24
Emerging of first workers	35
Flight of first foragers	50

In the parent stock egg-laying is suspended for fifteen days, the hatching of new workers will commence on the thirty-fifth day, and these will become foragers on the fiftieth day from the time the swarm left.

The Late Wilhelm Günther.—The death of this eminent bee-keeper is announced in the German bee papers. W. Günther was born on October 18, 1833, at Mulverstedt, attended the village school, and in 1848 entered the service of Baron von Berlepsch in Seebach as gardener. At first he did not come in contact with bees, but in 1850, when the Baron's bees were removed to the Castle gardens, he began to look after the swarms, and showed such an interest in them that he soon took over the whole management of the apiary. Berlepsch, who soon found him to be more than oridnarily intelligent, made use of him in connection with the great researches that were to play so important a part in the bee-keeping of the future. It was he who supplied all the materials from the Seebach apiary for the investigations of Dr. Lenckart and Dr. v. Siebold which led to the confirmation of the Dzierzon theory of parthenogenesis. In 1855 he first attended the meeting of bee-keepers at Düsseldorf, and after that usually attended Baron v. Berlepsch in all his api-

cultural excursions, and accompanied him to all meetings. In 1858 he took a lease of the Castle gardens, together with the apiary, which he from that time managed on his own account. After doing his turn of military service he bought a property in Gippersleben, and removed the Berlepsch apiary to this place. Here, up to the time of his death, he went in for honey production. He made a considerable income from transporting his bees to other pastures, and has moved as many as 400 colonies for this purpose. He only published one work, in 1880, "Practischer Ratgeber zum betreibe einträglichen Bienenzucht," which, however, has passed through several editions. He was a frequent contributor to the bee papers, and quite recently had written a series of articles in *Deutsche Illustrierte Bienenzeitung* on "Reminiscences of Baron v. Berlepsch in the years 1848 to 1855 in Seebach."

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of June, 1910, was £5,970.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7855.] What of the season? Is it to be another 1888, or will the clerk of the weather send us some sunshine? It is three weeks to-morrow since we had a good bee-day (Tuesday, June 21). On the following day it was stormy, and up to the present time we have experienced most dismal weather for the middle of summer, with only three half-days, including this afternoon, on which the merry hum of the bees has been heard. I cannot say how other bee-keepers' stocks are doing in their respective districts, but I know it will mean to me about half a crop of honey, even with good weather to finish up the season. There is a good show of white clover and vetches, and the limes are just coming into bloom, rather later than usual this year, owing to the absence of sunshine.

Working for Comb Honey.—In my own apiaries, which are almost solely run for comb-honey, I have always placed the second rack of sections under the first one, and this plan has worked well with me year after year. One of the advantages of this method is that it makes the removal of the first rack when filled and sealed such an easy matter with very little disturbance of the bees—a very important point when surrounded by neighbours. Another point is that bees dislike a vacuum, and the empty super being placed just above the brood-nest acts as an incentive to them to fill the empty sections more rapidly than if placed above the first rack. The second rack should not be put on too quickly, *i.e.*, before the sections in the first are sufficiently filled. I prefer them quite two-thirds filled before the second super is put underneath with a strong colony. Other points to be considered in working for sections are the honey-flow and the state of the weather, and everyone must exercise his own judgment in deciding how to act. But as I have said in previous articles, make a point of knowing your district and the extent of the forage, study your surrounding crops (they will be practically the same year after year), then work to get your bees into the best condition for the honey-flow when it comes.

In a poor neighbourhood for honey D. M. M.'s method (page 234) may be the best for securing one rack of finished sections rather than two racks of partly-filled ones.

Solar wax-extractors have been of very little use this year so far. I have had two in operation, but I shall have to rig up my thermo solar extractor, which I described in B.B.J. last year. I found it most efficient in extracting all the wax from the oldest of combs.—W. WOODLEY, Beedon, Newbury.

NOTES FROM NORTH HERTS.

PARTHENOGENESIS.

[7856.] Parthenogenesis (page 236) is a necessity for the bee-keeper, because no other theory will fit the facts of bee-life in our present state of knowledge.

In the evidence, however, there are still some points on which further information is wanted. The extreme supporters of the theory only concern themselves with the facts that are favourable, and ignore all others.

With regard to the fertile worker, Leuckart, who dissected a couple, stated that the ovaries were partly developed, and that the spermatheca was entirely absent. On the other hand, Siebold states that in all workers there exists, in addition to the undeveloped ovaries, an appendage which represents the seminal receptacle of the

queen, and on which he was able to trace "the seminal duct, the seminal capsule, and the two appendicular glands with their common efferent duct."

That these are present in the sterile worker and absent in the fertile worker is rather difficult of belief. Instances have also been recorded of drones having mated with worker-bees, but I do not remember any details of the anatomy of the said workers.

Again, what proportion of drone-breeding queens are unfertilised? My own experience is that a queen known to be unfertilised seldom lays at all. My only drone-breeder this spring had been mated. When will a virgin queen lay freely, and when will she prove a non-breeder?

Although the drones may normally arise from a parthenogenetic egg, this would not preclude the possibility of their occasional development from fertilised eggs. We know that hermaphrodite bees are sometimes produced, and it requires no great strain on one's credulity to suppose that an egg that produces an hermaphrodite will, under slightly different conditions, produce a male *or* a female. It is interesting to note that some experiments of Von Siebold on the eggs of a species of wasp showed that fertilised eggs brought forth male and female, and that parthenogenetic eggs, whilst chiefly producing males, produced a small percentage of females when nutrition and temperature were highly favourable.

Those who prefer it can adapt this rule to the honey-bee. I think, however, that the orthodox view will prove satisfactory enough for most bee-keepers.

Wasps (page 227).—During this last winter and spring I killed about fifty queen wasps, yet I have no doubt that, as usual, there will be a dozen or more nests within a quarter of a mile of my apiary. I am further persuaded that, notwithstanding the work put in at fly-catching, the wasps will find time to cause considerable annoyance to myself and the bees.

The truth is that we keep bees by warring against their enemies, just as we are able to garden by warring against weeds. Wasps are no exception to other pests. Their natural diet may be flies, but they have a habit, like sparrows, of taking what lies most convenient. If we leave matters to Nature they would cease to be a nuisance in the garden and apiary, because the garden and apiary would disappear. Mr. Baker's illustration of the "daddy-long-legs" that seized a wasp when on the look-out for a bee is paralleled at Albury by the sparrows who are persistently looking out for drones, but do not hesitate to snap up a queen-bee when the opportunity arises.—G. W. Bullamore, Albury, Herts.

[Leuckart overlooked this appendage in the first place, but admitted subsequently, after further investigation, the presence of a rudimentary seminal receptacle, which exists both in the sterile and fertile worker. Siebold also states, in addition to that quoted above, "but all these separate parts of the seminal receptacle were in a very undeveloped state." It is, however, because they exist, although in a rudimentary form, that workers are classed as "undeveloped females." The relative development of the ovaries of queen, worker and fertile worker are shown on page 135 of "The Honey-Bee." We know of only one authenticated case of a drone pairing with a worker, but this was an abnormal case, and was probably an act of violence. We have had several cases under observation in our own experience of late-bred unfertilised queens becoming drone-breeders. We had one reared in the autumn of 1908, and kept her for the purpose of settling this question. In the spring of 1909 she laid eggs which produced only drones until the colony gradually dwindled.—Ed.]

THE CURE OF BROOD DISEASES AND OTHER MATTERS.

[7857.] Further experience with diseased stocks only confirms the views I expressed in my article on "Disinfecting Hives" (B.B.J., July 15, 1909, page 274) *re* swarms taking the disease with them and re-developing it in their new homes. The following facts tend to show—and that very strongly—that not only do swarms convey brood diseases, but that shaken bees quarantined for three days will develop disease in the very first batch of brood raised by them.

A few weeks ago I shook the bees of a stock into a well ventilated quarantine-box, keeping them confined in a cool, dark place for three days, feeding them before hiving on the last day (to prevent actual starvation), then hiving them in a perfectly cleansed hive on new frames of foundation. Now, the queen of this lot, after laying a batch of eggs on three combs, died or was lost in some way, no more eggs being laid afterwards. On examining the hive some time after hiving, diseased cells were found on each of the three combs. The larvæ had died soon after being sealed over, the colour varied from a dirty yellow to dark brown, the skin mostly intact, the contents rotten with very little ropiness, and the smell sour. The larvæ in the queen-cells which the bees had raised were dead just like those in worker-cells.

Now, I should like to point out that the differences between a natural swarm and this "turned-out" lot are all in favour of the latter. In the first place, it is almost certain that the swarm

—gorging their own stores at their own sweet will—would take considerably more honey with them than the shaken lot: also the swarm is generally hived without any quarantine unless sent a long distance, and even then the quarantine would seldom exceed the three days, so that, if the above-mentioned lot of bees carried the disease, a swarm would be even more likely to do so under the supposition that the infection is in the honey.

Now, after an experience such as this, I cannot be expected to have much faith in the turning-out-cum-starvation-cum-disinfecting method. The job was thoroughly done from first to last. The bees were not, as in the McEvoy method, thrown back into the infected hive, and they were entirely isolated for three whole days; not merely for thirty-six to forty-eight hours, as is usually thought sufficient.

Another important matter about which we do not get the exact truth is "robbing." I notice ("Gleanings in Bee-Culture," January 15, 1910, page 38) that Mr. Doolittle says, "*if there are enough bees to ward off robbers* let it (the stock) entirely alone for three weeks to a month." But close observation shows that, at any rate in such seasons as we have had for the past four years, robbing, or attempts at robbing, are practically chronic throughout the season. I am not certain if even during a good flow of honey *all* robbers are diverted from their nefarious ways. Robber-bees are as persistent as wasps, and one can always, by watching long enough, see wasps enter *any* stock. They may be challenged again and again; but their indefatigable persistence, as is usually the case, whether it be directed to good or bad ends, wins the day. Odd robber-bees gain entrance in just the same way, so there can be no certainty, no guarantee, as Mr. Doolittle wishes his readers to infer, that *none* of the honey from the diseased stock will be stolen by the bees of other hives.

The Adverse Season.—I say *the* season, but ought I not rather to write seasons, as the present (to date) is the fourth bad one running? During 1907, 1908, and 1909 my bees have barely paid out-of-pocket expenses, and 1910 so far is, I think, the worst of the lot. In this district we only had *four* consecutive good bee-days in June, to wit, the 18th to 21st, since which time the weather has been very consistent in one respect—it steadily gets worse! Since 1906, therefore, my labour in the apiary—and it amounts to a good deal in that time—has been thrown away. How now, you praters about £2 profit per hive? I very much question whether some of you (after reckoning winter losses, &c.) have made even 2s. average profit per hive for the past three seasons. And, unless the weather alters very soon, many of us will not get *one* shilling per hive clear this year as an insulting apology for payment for a lot of hard work. An *odd* bad season one can put up with, but when *four* such follow one another in Indian file it makes one feel inclined to kick the whole apiary into the moat (which runs near my bees), and then chop the hives up for firewood; the propolis and brace-combs would make them burn all the better, and the foul-brood germs would cause no anxiety whatever—they could not infect the coals! Shall we ever get a real summer again, or has our late mysterious visitor from the depths of space flown off with the last of them? Time alone can tell.—Saml. P. Soal, Rochford, Essex.

BEE-KEEPING IN CORNWALL.

CURIOUS EFFECT OF BEE-STINGS.

[7858.] The last two or three times that I have been stung by a bee I have developed a violent attack of sneezing, running at the nose and wheeziness, and pain in the lungs. The attack lasts about an hour and leaves me in a state of semi-collapse. Have you in your vast experience heard of a similar effect of a sting, and could you suggest anything I could do to counteract it, for with the most careful netting and gloves one is liable to get a sting at times?

We have had a most trying week of wet and wind, violent showers and bright intervals. There are more clover and bee-flowers than I have ever seen, but the bees cannot get out (without risk of being drowned or blown away) to bring in their harvest. Out of twenty-three strong hives I have only been able to get sixteen completed sections so far.

Two prime swarms issued last week, and they joined together and made such a bulk that if I had not had one of your old thirteen frame body-boxes by me, I should have had to put two tens on top of one another. I wish I could resuscitate the Association here; if I attempt it might I rely on some help from you?—F. A. A., Fowey.

[We have known such cases to occur sometimes, and bee-keepers who were quite immune at one time got to a period when they suffered just in the way you describe, although such cases are rare. The Rev. Dr. Langstroth had to give up bees for a similar reason, and Mr. Heddon, an extensive American bee-keeper, suffered in the same way, although for many years he felt no effects from stings. Cases have been known where change in the constitution has enabled bee-keepers to work comfortably amongst bees again. In any case, anyone suffering in the way described should be well protected against stings. You

should consult a medical man as to the best treatment. We hope you may succeed in re-starting the Cornwall Association, and will give what help we are able. —ED.]

BEES AND RAILWAY PORTERS.

[7859.] I enclose a cutting from the *Daily Mirror*, which may be of interest to any reader living at Surbiton. It seems to me a great pity that no bee-keeper was at hand to take charge of the bees, for the burning of the stock seems unnecessarily cruel and wasteful.—J. L., Leeds.

"Passengers waiting on the platforms and the railway staff at Surbiton yesterday were besieged by a winged army of bees.

"Six hives had been dispatched from Guildford, and when the porters went to the luggage van to remove them they found it defended by a host of bees which had managed to escape. The first hive they touched fell to pieces, and they were attacked by a stinging army.

"The luggage van was detached and sent to Waterloo, but as the bees had to be delivered at their destination the van was returned to Surbiton. The porters dragged the hives on the platform and immediately the station was in a state of siege, passengers scattering in all directions from their winged assailants. Several porters and a railway inspector were stung before the fight ended by the burning of the broken hive."

WINTERING WITH EMPTY SUPER IN POSITION.

[7860.] *Re* "W. H. W." in B.B.J., June 23, on wintering with empty rack of shallow-frames on the hive. I tried this plan about four or five years ago, and my results were just like your correspondent's, viz., hardier and more robust bees, a much earlier brood-nest, and consequently earlier swarms. Contrary to "W. H. W.'s" experience, I did not find that the bees consumed more stores, or at least not sufficient to compel feeding earlier than if wintered in the orthodox way, of course, provided they had plenty to start to winter on. My plan was, after extracting and clearing up the combs, to examine the stocks, and feed liberally if necessary, and at the end of October remove the feeder. Should any syrup be left, pour it into one of the centre combs of rack of shallow frames, remove the quilts, put on the shallow-frame super, and then cover down snugly on top. The larger air-space keeps the bees healthy, and gives them better access to the stores than even winter passages can do, and I found them clustering right on top of the frames in the body-box in many cases.

I found another advantage of this plan was that one could more readily examine in winter or spring without disturbing the bees; also it was much easier to give a fresh cake of candy if required, as the bees easily come up over the frames. I certainly think it is much better to winter in this way, instead of packing everything down so warmly as some do. When kept so warm, they are likely to consume more stores than if kept cooler. Some of our big bee-men might with advantage try this plan on a stock or two this coming winter, and give us their opinion in the spring.—R. L., Castle Cary.

HOLIDAY AMONGST BEE-KEEPERS.

[7861.] Would one of your readers let me know through the B.B.J. of any apiaries near Galloway or other part of Scotland, as I am going for a holiday in August, and I should like to spend it amongst bee-keepers if possible? I see in the Isle of Man there is one who advertises apartments for brother bee-keepers, but I prefer the neighbourhood of Galloway or some other place in Scotland or Ireland.—GARDENER, Renfrew, N.B.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Folding Sections (page 234).—To obtain these perfectly square I have found it of great assistance to depress each end—the dovetailed part—in towards the centre of the section for a slight distance, about ½ in., before uniting the ends. This closing of the first and third corners to excess reduces their tendency to open, and prevents their united force from overcoming the middle or second corner. Try this method. The advantage of having the section square at once is that the foundation will then hang truly, and free of the sides, even though it may be nearly the full width, and the section does not afterwards rely upon the rack to ensure its truth. If the rack be ever so slightly large, be sure the untrue section will claim elbow-room.

Removing Supers (page 235).—It is, of course, imperative to use some subjugator when removing supers, whatever may be done when giving them; but the bees should not be allowed to remain in the sections, even though subdued, for a moment longer than is absolutely necessary. Recently I was suddenly called away in the middle of this operation, so replaced the full super above the new one, only to find on my return that what would have been show sections now contained many blemishes.

Blessings of Bee-keeping (page 237).—I wonder if it is true, as Mr. Coates suggests, that the optimism of the bees is

contagious. It is a stimulating thought, and may account for the invariable hope of the bee-keeper that next season will be better. Or is it that the optimistic type of man is the one whose thoughts more readily turn to our enchanting occupation?

Hawthorn Honey (page 238).—In view of conflicting opinion as to the existence of this, perhaps J. J. M., Laxey, will tell us exactly how he knows that this tree was yielding nectar copiously. I have had a sample sent to me by Mr. A. S. Dell, chemist, Leigh, Lancs, which certainly has the scent of the "may," and which he assures me was gathered at the time it was in bloom. This seems convincing enough; but has any observer actually taken bees at work upon the tree, gathering honey?

"*Even to Russia*" (page 245).—But surely Russia is not such a far cry from Rome that it should be referred to thus as the ends of the earth, although sentimentally it may seem much farther off than the doorstep. Nor is it such a bad country for bee-keeping that the sending of bees should cause surprise. "Even" Siberia produces great quantities of honey and wax, and as to the parent country, one would almost expect it to be the home of *le rucher et ses ruches!*

Supered in Winter (page 246).—The question arises whether it is profitable to leave the super in place. If it results in a much more forward stock at the expense of the stores, and with consequent feeding, the plan can only be of use to the small producer, and the labour and cost of honey and feed should be weighed against the increased spring yield. But is it not possible to have stocks sufficiently forward without this plan, which has other objections? The early honey which can be obtained is of an inferior grade, and whilst most useful in advancing a stock, is only, in my humble opinion, a stepping-stone to the summer harvest of fine honeys, for which there is time to prepare sound, well-queened stocks without undue stimulation.

Three Queens with a Swarm (page 247).—Probably this was a delayed, or a second, swarm, and the queens were virgin, although in this case one would not expect balling of the drones with vicious intent.

"*Foul Brood Business*" (page 247).—Surely this *is* "the winter of our discontent" which we desire to be "made glorious summer"! But you can never trust the weather in England.

Old Foundation (page 248).—I think it is sound business policy on the part of the makers to assure the bee-keeper that his foundation will not waste with keeping. He will buy more charily if he contemplates loss of this nature. I have used very old and brittle super foundation, holding each frame of section to the fire for a few moments before placing finally in the rack, and the results were as though the freshest sheets had been used.

No Gloves (page 248).—"As soon as the budding bee-keeper has found his feet he will discard gloves as useless encumbrances." Just why he should use gloves for the purpose is not clear. Surely, if it were for protection against bees, and such like, Hessian boots would be more satisfactory and less encumbering. Of course, if they are only required to help him in his quest for his feet, I have no criticism to offer, except to wonder whether the objects of his search are already beneath his notice.

Queries and Replies.

[4023.] *Drone-brood in Super.*—I had some colonies very strong during May this year, with ten standard frames of brood, and as at the time there was no surplus to be stored in supers I tried giving one of the queens a rack of ten shallow frames with worker foundation, which was soon filled with brood. When the clover bloomed I put the excluder above this super, and then the section-racks above that. Last week I removed this super to the top of the hive, and put an empty section-rack in its place, with excluder below it. The brood is decreasing in the super, and it is being filled with honey. I have found this plan answer very well, and the only difficulty which presents itself is that a considerable quantity of drones have been raised in the super in spite of the full sheets of foundation given. These drones are hatching and are imprisoned by excluder in the supers. Can you tell me how to prevent drones being raised? I see in the "Guide Book" the narrow spacing of combs is advised to ensure worker-cells being built when starters are used, and it says when the combs are built they must be placed at the usual distance apart.

So this plan, it appears, would not prevent the production of drones, as when the frames were placed at their ordinary spacing the bees might elongate the worker-cells and rear drones if not already occupied by worker eggs. A reply through your very valuable paper, the B.B.J., would much oblige.—J. H. T., Hedon.

Reply.—If you keep the shallow frames closely spaced until you wish to use the rack as a super, you will obtain workers only. When placed in the hive as a super, the queen not being allowed access to

them, they can be spaced the proper distance. Workers can emerge with the close spacing. It is not a case of elongating the cells to produce drones, but the base must be made larger. In order to obtain drones bees often tear down a portion of worker-comb and build drone-cells. Worker-cells are one-fifth of an inch in diameter, drone-cells one-quarter.

[4024.] *Swarming Vagaries: Bees Refusing to Work in Supers.*—As a beginner in bee-keeping I shall be glad of your advice in the following difficulty: I started with a hive of bees in the middle of May last. They swarmed on June 11, and the swarm was driven into another hive. The original stock swarmed again on June 21, and the swarm was returned, but came off again on the 23rd, and were again returned to the same hive. Before returning them the second time I destroyed all the queen-cells, leaving a queen in the hive and killing the other queen as I did not wish them to swarm, being anxious to get honey from this hive if possible. The fourth day after returning they began to throw out dead drones, and this continued for about three days. From July 1 to 9, on the days whenever there was any sunshine, the bees have been very restless from about twelve o'clock to three, the workers coming out on to the alighting board in companies of about twenty. The drones keep flying very excitedly around, the workers apparently objecting to their returning to the hive. 1. Can you say what is the cause of this? To-day I have examined both the super and brood-chamber. I find very little honey in the super. I found two queen-cells in the brood-chamber which I destroyed. 2. Is there anything I can do to encourage them to work in the super? The swarm hived on June 11 I am told is a good strong one, and was advised to put on supers with combs drawn out on June 23; but on looking at them to-day I see no signs of their working in the super at all. 3. Is it desirable to give food in either of the hives?—A READER, Cheshire.

REPLY.—1. The bees have evidently given up all idea of swarming, and this accounts for their killing the drones. The excitement and actions of the bees are usual when the drones are being killed off. 2. No doubt if the weather becomes warmer the bees will go into the supers, as the past three weeks have been so cold and wet as to render it impossible for them to work. 3. The bees need not be fed if the weather allows them to forage for themselves.

[4025.] *Artificial Increase.*—I have nine stocks of bees in bar-frame hives and wish to increase. 1. Would it be wise to divide a fairly large stock now or leave it till the spring? 2. One stock appears to have a drone-breeding queen. Should she be destroyed now, or should this also be done in the spring?—ESSEX.

REPLY.—1. You can divide now, and to get the best results a young queen should be obtained to put in the queenless portion. 2. The drone-breeding queen should be removed and a young one introduced, or the colony may be united to another.

[4026.] *Re-queening.*—Will you kindly reply in "Queries and Replies" to the following?—Will it be too late for bees to re-queen themselves if I remove present queens, say, on August 6? Of course, that is providing they have young brood in hive.—C. N. W., Stoke-on-Trent.

REPLY.—Yes; it will be much too late. The better plan will be to buy young queens, or if you can get some skeps to drive, select the queens from those which have swarmed, so getting the young queens.

Bee-Shows to Come.

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c. Hon. Sec., Mr. W. Wiltshire, Maindy Schools, Cardiff.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. **Entries closed.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. **Entries closed.**

July 28, at Middle Wallop, Hants.—In connection with the Horticultural Show. Open classes for Honey; Best 1-lb. Jar Extracted, Best 1-lb. Section. (Entry free.) Schedules from Pryce E. Roberts, Schoolhouse, Nether Wallop, Stockbridge. **Entries close July 21.**

July 28, at Tiverton.—Devon B.K.A. Show of Honey, Bees, Wax, and Appliances, held in connection with the Annual Exhibition of Tiverton and District Agricultural Society. Open Classes, Special Prizes. Schedules from R. W. Furze, Woodbury, R.S.O., Devon. **Entries close July 19.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Melton Park, Melton Constable.—Annual Show of the North Norfolk B.K.A. Four Open Classes, including one for Single 1-lb. Section and one for Single 1-lb. Jar of Honey. Schedules from Miss Leaven, Letheringsett, Holt, Norfolk. **Entries close July 23.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 3 and 4, at Abingdon Park, Northampton.—Honey Show of the Northants B.K.A. Special prizes for open classes, including one for single 1-lb. jar honey. (Entry free.) Judge, Mr. W. Herrod. Schedules from R. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close July 26.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 10, at Wye, Kent.—Kent Honey Show. Four open classes, fifteen open to Kent. Trophy, cup value 3 guineas, two Challenge cups value 6 guineas each, one Challenge cup value 5 guineas, numerous other Special and money prizes. Special classes for Cottagers, also class for Members of Ashford and District Bee-keepers' Association. Schedules from H. C. Chapelow, Hon. Sec., Wye, Kent. **Entries close August 1.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. H. (Devon).—The bees sent are all queens. They are virgins, and have evidently been turned out of a hive which has swarmed, one or two of them being immature.

R. S. KENDALL (San Antonia, U.S.A.).—*Bee-keeping in England.*—1. The best counties for bee-keeping in this country are Hants, Berks, Norfolk, Suffolk, and Cambridgeshire. 2. A good colony of bees in a hive will cost from 40s. to 50s., according to season. 3. The average yield per hive of honey in this country is from 60 lb. to 70 lb. in a good district. Extracted honey and 1 lb. sections sell retail at from 10d. to 1s. per lb. When sold in bulk 1 lb. sections fetch 8s. to 10s. per doz., according to quality, and extracted honey realises about 56s. per cwt. 4. We always advise those starting to commence with swarms of bees which are not so expensive, costing from 10s. to 20s. each.

B. B. (Ramsgate).—*Storifying for Surplus.*—1. The best method, if several supers are on the hive, is to raise the whole by a block at each corner, thus keeping them level. If plenty of super room is given, the bees are not likely to get in between outer case and brood-chamber. 2. The American climate, flora, and methods are so different to ours that the information, though interesting, would be of little service to British bee-keepers. Mr. Doolittle's books explain the system practised in his apiary.

Suspected Combs.

ASAPH.—Comb is affected with foul brood.

J. V. (Snaith).—Comb is affected with sour brood. The best treatment will be to re-queen the stock, and use "Apicure" in the hive. Thank you for the old queens.

C. M. (Oldham).—The stock is suffering from foul brood, as shown by the comb you send. If the bees have dwindled to such a small number, it is not worth while trying to cure it.

C. S. (Weybridge).—There is no disease in the comb you send. You are doing right to use medicated syrup for feeding, and as the two other stocks are

healthy, destruction of the infected one was the wisest course to take.

Honey Samples.

H. B. (Kidderminster).—Sample is a very nice clover honey, colour, flavour, and consistency all being good. Quite good enough for showing in light honey class.

H. F. B. (Saffron Walden).—A very good honey, mainly from charlock. Honey from this source, though of excellent quality, is apt to granulate very quickly, and you should sell your sections as soon as you can, as it is certain they will granulate also if they are kept on hand.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

1909 CLOVER HONEY, Candied, screw-capped bottles. Price 8s. per dozen. —Apply, HERBERT DIVALL, Ringmer, Lewes. c 52

4 STRONG, Healthy Stocks Bees, Bar Framed Hives, also 4 spare Hives, complete, as new. Offers.—Further particulars, NICHOLAS, 36, St. John's-road, Sparkhill, Birmingham. c 53

WILL EXCHANGE EDISON GEM PHONOGRAPH FOR EXTRACTOR. — Address, RICHMOND, "Bee Journal." c 63

ABOUT 500 LB. OF SPLENDID RUN CLOVER HONEY.—Particulars from NIGHTINGALE, Castlefields, Shrewsbury. c 57

A LATHE, 20 in. bed, heavy fly-wheel, and crank, carries small circular saw, 4 turning tools, no bench, worth 30s.; will take healthy Bees, or 3 months' old chickens; each pay their carriage. —GUY, St. Margaret's Station, G.E.Ry. c 58

FOR SALE, 5 Hives (Taylor's), with Bees, and 2 Skeps. — Apply, PHIPPIN, Norris Farm, Stow Maries, Essex. c 56

STRONG SOUND 10-FRAME HIVES, zinc roofs, 5s.—LIDBETTER, Lidham Farm, Guestling, Hastings. c 55

HEALTHY DRIVEN BEES, commencing August 1, 4s. per lot, with Queens; boxes to be returned. Orders in rotation. Cash with order. —T. PULLEN, Ramsbury, Hungerford. c 71

GEARED EXTRACTOR, good condition, takes Standard Frames or Sections.—ADAMS, Dunton, Biggleswade. c 73

CARNIOLAN NUCLEI, Hive, 4 Standard Frames, 15s.—BEECROFT, Abbott's-road, King's Heath. c 72

SEVERAL NEW "W.B.C." HIVES, cheap. Will exchange for driven Bees, early.—WILLETT, JUN., Bee-keeper, New Malden, Surrey. c 68

WANTED, Geared Extractor. State lowest price, or would exchange strong healthy Skep of Bees.—APIARY, Elm View, Hedon, Hull. c 62

Special Prepaid Advertisements.—*Continued.*

HEALTHY DRIVEN BEES, young Queens, Orders rotation; August 1, 3s. 6d.—BATES, Aston Clinton, Tring. c 61

GUARANTEED PURE ENGLISH HONEY, 1910, finest quality, in 28 lb. tins, 16s. 6d. each; cash or deposit; tins free. Sample, 3d.—A. GREEN, Tangley, Andover. c 69

WANTED, First Grade Sections. State quantity.—GIBSON, chemist, West Hartlepool. c 60

WANTED, 2,000 best filled Sections, also fine Extracted.—DELL'S, Leigh, Lancs. c 70

EXCHANGE "W.B.C." HIVE, value 12s., for 3-Frame Nuclei or 2 1910 Fertile Queens.—E. WHITFIELD, 7, Elizabeth-street, Houghton-le-Spring, Durham. c 59

HIVE. Taylor's dovetailed, new, painted four coats, roof covered oilcloth, painted, 10s. 6d. —F. B. MERCER, Sidmouth. c 41

150 LB. GRANULATED 1909 HONEY, in tins, cheap, slightly tainted with Honeydew. What offers?—A. HUMPHREYS-OWEN, Glansevern, Berriew, Montgomeryshire. c 48

WANTED, Sections and Extracted Honey. — State quantity and best price. — HUTCHISON, Lowood, Lenzie. c 43

DRAWN-OUT SHALLOW FRAMES, 3s. 9d. per doz.; Racks, 1s. each.—HEWETT'S APIARY, Alton, Hants. c 36

8 BEE-HIVES AND SWARMS, also new Honey Separator, Ripener, and various Bee-appliances for sale.—MRS. TRIMMER, Bentley, Hants. c 25

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WHITE ORPINGTON AND BLACK MINORCA, good typical birds, bred for laying and exhibition, especially fed to produce strong, healthy chicks; eggs, 15 3s. 6d., 50 10s.; day old chicks, 6s. doz., 50 £1; very carefully packed. — J. HOUSEHAM, M.U.P.C., Huttoft, Alford, Lincs. x 27

BUSINESS ANNOUNCEMENTS.

CLEARANCE SALE. — Hives from 5s.; Super Clearer and Board, 1s.; Skeps, hole in flat top, 1s. 3d.; "W.B.C." ends, 1s. 6d. gross; Wax Mould, 1s.; Excluders, 6d.; Section Crates, 1s. 6d. and 2s.; Tin Dividers, Feeders, Travelling Crates, &c., all reduced. Enquire for anything wanted.—F. KENT, Bee Appliance Works, Dorchester. c 64

STRONG 4-FRAME NUCLEI, with Queen, free travelling boxes.—BARLOW, Bee-keeper, Stoke-on-Trent. c 67

GOOD LIGHT-COLOURED SECTIONS WANTED.—SMITH AND CO., 17, Cambridge-street, Hyde Park, W. c 54

1910 QUEENS, 3s. 6d.; Virgins, 1s. 6d.; safe arrival guaranteed.—TOLLINGTON, Woodbine Apiary, Hathern, Leicestershire. c 65

Editorial, Notices, &c.

REVIEW.

Garden Allotments, by J. Wright, V.M.H., F.R.H.S. London: Agricultural and Horticultural Association. One penny. This is No. 27 of the series edited by Edward Owen Greening, who gives in a "few forewords" the following explanation of the interesting circumstances under which it has been prepared:—"One of the most earnest and devoted philanthropists of our time, Dr. J. B. Paton, of Nottingham, conceived the idea of establishing gardens for our soldiers, who live in barracks where there is generally too little of human interest and variety for their lives, in spite of some excellent recent improvements and developments. This idea he communicated to me, requesting me to co-operate in the good movement, for which he hoped to gain the effective help of Mr. Haldane, M.P. One set of such gardens has been successfully established at Mill Hill Barracks by the active efforts of Major Pemberton. For these gardens the One and All Association furnished seeds and other supplies, and organised a course of lectures to the soldiers on garden-culture bent. The results have fully justified Dr. Paton's anticipations as regards their educational and recreative effects. It can clearly be seen that a general development of gardens of the kind would be a work of national importance. Dr. Paton's idea was to condense, if possible, in a very brief space all the lessons of prime importance necessary for an amateur to learn in order to manage to advantage a garden-allotment. Mr. Wright has had probably more experience of this kind of teaching than any other living Englishman. He has given infinite pains to carry out Dr. Paton's idea. The 'lectures' prepared for the benefit of soldier-gardeners are so good, so clear, so comparatively complete that I confidently anticipate for them a wide welcome by amateurs of all classes and conditions. Special care has been taken to illustrate fully Mr. Wright's instructions, and to make them easily understandable by anyone."

We may add that the book, which is fully illustrated, condenses in a very brief space the lessons of prime importance for an amateur to learn, and will be found useful to anyone possessing a garden.

AMONG THE BEES.

BAITS.

By D. M. Macdonald, Banff.

It is generally advised that all partly built-out sections of the previous season should be carefully preserved, and one or more inserted as baits in the centre or at the corners of the first rack supplied to each colony. They are an undoubted attraction to the bees, and tempt them up into supers at an earlier date than if they were not used. Lately, several bee-keepers have advised that supers should have frames of drawn-out combs at each side in the rack of sections, and they contend that these are the best possible baits. I think, however, we might go one better than that. Wherever brood is, there will the bees follow. Now, if we can get one or two shallow frames with brood and some honey in our supers the workers will not fail to ascend and nurse the young unsealed larvæ. Care must be taken, however, to withdraw the brood from aloft before the bees begin to cap the sections. Herein lies the principal, or perhaps the single, drawback to the use of this plan. With careful management it should prove quite successful. Sometimes another plan is followed. A rack of sections is placed immediately over the frame tops, and a shallow super above this, with, if possible, some brood in it, although that is not altogether necessary. When bees are actively engaged in building in the rack the supers can be reversed. A really strong stock requires no tempting up if weather is good and a honey-flow is on.

Propolis.—Owing to having received swarms and driven bees from many sources every season for the past twenty years, I have been enabled to pay some little attention to the point of propolis-gathering, and I find a very considerable variation in different strains of bees. Some of them use very little bee-glue, others daub every point in the hive, while there is every degree of modification between the two extremes. The very worst varieties are the Caucasians and the so-called Punics, although I make the latter undoubted statement of fact very largely on hearsay evidence. Running them very closely are certain strains of Italians, and more especially Carniolans, and their hybrid crosses. Blacks very rarely overdo the application of this resinous gum to any part of the hive. In a bad case the colony should be re-queened. Locality undoubtedly has a good deal to do with a lavish gathering and use of this substance. Where it is exceptionally plentiful and easily procured bees collect more of it than when they have to go far and frequently afield for its gathering. A free use of vaseline about parts of the hive coming in close contact prevents the sealing down of these parts. When bees are too free in its application it becomes a perfect nuisance in handling frames, scraping sections, and withdrawing supers. Paraffin, spirits of wine, and concentrated lye help in removing it. If dividers and other loose parts are boiled in soapy water the propolis disappears.

Scraping when it is dry and hard removes it easily.

Handling Frames.—I confine myself at present to the single point of withdrawing and returning frames in such a way as not to destroy bee-life unnecessarily. Some believe in putting a staple spacer on the frame-ends in order that they may be kept in a perfectly perpendicular position when withdrawing. The other day a tapering frame was illustrated, presumably to secure humane handling. Irish-made hives have a space of $\frac{3}{8}$in. instead of our orthodox $\frac{1}{4}$in. between frame-ends and hive-sides. The staple spacing is a delusion and a snare, the taper frame is an old fad resurrected for the twentieth time, and the more roomy space is an unnecessary innovation. If combs are properly handled there should be no slaughter of bees in manipulating them. Mr. Crawshaw some time ago gave his plan for avoiding any such careless slaughter. If the frames are raised and lowered after examination of the combs, as he advises, there can be no loss of bees by crushing. Gentleness in manipulation is a prime necessity in securing successful bee-management. The gentle, gliding motion tells, and although it may take up a little more time the waste of minutes is more apparent than real. Bouncing, jerking movements annoy the bees and do not hasten the termination of a thorough examination. Steadiness of purpose and steadiness of nerves count in withdrawing and replacing frames as no additional space, tapering frame, or useless spur can do.

Avoid Temptation.—In countless ways the bee-keeper can save the bees from engaging in useless labour: "How oft the sight of means to do ill deeds makes ill deeds done." Brace-combs left over from last season should be scraped clean from the tops of the frames before inserting supers. That is a simple truism. But don't leave even their outline, as the merest tracing will be a temptation to the bees to renew them in the coming season. The same holds true of any burrs found on the lower rests of section racks. Erase all trace of them. Now and again, for some reason, frames are braced together, and require a fair degree of force to part them. No matter how frequently this separation is made the bees are all but certain to renew the connection unless there is a complete erasure of the cause. At times during a heavy flow bees work outside the dummy-board. Repeatedly I tested the matter of renewal by simply rubbing or breaking off the piece of comb built, to find that it was most certainly rebuilt the next season if opportunity offered. A hive I once used to visit had a faulty bridge piece, allowing the bees access to the open space between the outer and inner front walls of a "W. B. C." hive. This space contained a nice, well-built comb. Although it was cut out, the bees renewed it for five successive years. On being planed clean off, however, they desisted, and, although very strong, made no attempt to renew it. As all this comb-building is a pure waste of time, don't tempt the bees to engage in it. Avoid supplying them with even the appearance of temptation.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES FROM NORTH HERTS.

PARTHENOGENESIS.

[7862.] *Parthenogenesis* (Editorial note, page 276).—My own view is that in every egg laid by the bee there are three potentialities of development, and that each of these react to a different stimulus. In the unfertilised egg the drone element becomes active, fertilisation causes the female element to develop, and the kind of food supplies the stimulus for the development of the worker or queen elements. In abnormal cases the stimulus is insufficient, and we get intermediate types.

In hermaphrodite bees there is no fixed type. We get the sexes combined in all proportion, and this leads me to suppose that, in the intermediate types between queen and worker, careful investigation would prove the occurrence of all possible combinations of queen and worker. Another explanation of the drone pairing with a worker is therefore that owing to some abnormal development the worker gave forth the odour of an unmated queen.

According to Siebold, Leuckart convinced himself that the rudimentary seminal receptacle was present in worker-bees. Its presence is inferred in the egg-laying bees he had previously dissected, but the extent of its development is unknown. Siebold contents himself with the suggestion that it must have been smaller than in a perfect queen, otherwise it would not have been overlooked.

In Cheshire's book the spermatheca of the fertile worker is given in the illustration as somewhat larger than the spermatheca of the normal worker.

The presence or absence of this organ

in the workers has had little to do with the decision that they are females. The early observers were probably satisfied when they discovered the rudimentary ovaries.

A queen in my own apiary that took her mating flights unsuccessfully in February absolutely failed to breed. Professor Cook, of America, states than an unmated queen proves sterile or a drone-breeder. Can either kind be produced at will? Do we know if external causes in any way influence the matter?

Hawthorn Honey (page 238).—In this district, although we have miles of hedgerow, the bees seldom visit the "may" blossom. I have only seen them working it on one occasion, and that was two seasons ago. They were at it all day, and my scale hive increased 5 lb. in weight for the twenty-four hours.

Several times last year I noticed the bees gathering pollen from buttercups.

Brood-disease (page 276).—Is it not possible that the queen was diseased and that this caused her death shortly after the transfer? In that case the swarm would stand a better chance of being healthy, as it is improbable that a queen "on her last legs" would be sufficiently active to lead them.

Mr. Soal's letter raises another interesting point. Was it correct to keep the bees cool for the three days they were confined? The resistance of the bee to disease-germs would probably be greatest at a temperature approaching blood-heat. Cold may possibly favour the germ as well as diminish the resistance of the bee. A few real summers would do good to both bees and bee-keepers.

Do Queens Leave the Hive to Die?—This summer a very old queen crawled laboriously out of one of my hives. She was carefully attended by about a dozen workers, who arranged themselves with their heads towards her. The other bees ignored them. In about twenty minutes she had traversed the alighting-board, fallen over the edge, and was dead and alone.—G. W. Bullamore, Albury, Herts.

ROSS-SHIRE NOTES.

WORKING FOR SECTIONS—QUEEN-INTRODUCTION.

[7863.] I see there are complaints of an adverse season in this week's B.B.J., while Mr. S. P. Soal is ultra-pessimistic (page 277). Our Northern bees, however, are doing well considering the low temperature now prevailing. In my own apiary I have them occupying two and three racks of sections, while one forward colony has just gone up into the fourth super. All supers after the first were given on top and well in advance of requirements, *à la* "D. M. M."

Abundance of super-room, with wide entrances, form our only precautions against the swarming fever. This has been an abnormal swarming season, even bar-frame hives throwing off two and three swarms. As yet, not one of my stocks has given any trouble in that way.

English swarms, although late, are doing excellent work. One received on July 6 was treated in rather an unusual way. Swarms are usually put on starters or full sheets of foundation, and sometimes on empty combs, but I hived this one on eleven "Reid" shallow frames, two of them containing unsealed brood, the other nine almost full of old honey. A rack of "tall" sections with drawn-out combs was given at once, and a second having foundation only was put on later—fifty-four sections in all. The upper rack, I find, is almost filled and partly sealed, so the first given will doubtless be fit for removal at any time. Of course, in this case the rapid filling of the sections is accounted for by the bees shifting the stores above to make room for the queen.

Doolittle, in America, has great success with artificial swarming on similar lines, and I am quite sure natural swarms worked in this way would give better results with less trouble than usual.

Heather Methods.—The purple heather failed us completely in 1909, but we hope to collect the arrears this season. Extra strong colonies are indispensable, and I think we shall have them this time. Some of my stocks were rather backward, having plenty of brood, but only a small force of gatherers when the clover began to yield.

I made up a nucleus from each, taking away the queen and two or three frames of brood, and filled up the queenless portion with empty combs, threw in a Southern swarm, and put on sections. This plan worked well, the swarm equalling an established stock, while the nuclei are building-up strongly for the heather. In some cases I divided the nucleus into two portions, with a perforated divider between, to build up extra strong colonies by the dual-queen system.

Queen-introduction.—The safest plan of all is to insert first in a broodless nucleus. On receipt of queen make up a nucleus with two combs of bees having honey and pollen, but not a particle of brood or eggs. Confine them indoors, and when in an uproar give a smart jolt to the box, thus throwing the bees on to the floor-board. Now remove the lid from the mail-cage, place the latter among the bees, and close the hive, with the assurance that her majesty is safely climbing on to the combs along with her newly-found subjects.

Give a frame of hatching brood next day, and when eggs are being laid dequeen the old stock and unite to nucleus same evening.

This method discounts all risk and obviates the usual eggless interval.—J. M. Ellis, Ussie Valley.

HONEY-DEW.

[7864.] Colonel Walker's paper on honey-dew, read at the B.B.K.A. Conversazione and reported in B.B.J. of April 28 last, was very interesting to me, as, having been a gardener nearly all my life, I can endorse his opinion as to its source. I take a great interest in bees and other insects, and through my business have an opportunity of studying their habits. This district is principally devoted to the growing of hops, fruit, and market-garden produce. There are very few meadows; consequently very little white clover, very little sainfoin, a few horse-chestnut and lime trees, and a large acreage of runner beans. If the weather is favourable and the bees strong, we get a good surplus from the plum, cherry, and apple blossom, though the honey is rather dark and strong-flavoured. Then comes the raspberry, the nectar from which is light in colour and excellent in flavour. After that we get a mixture of different sorts. If the weather should happen to set in dry, with a N.E. or E. wind, after the fruit-blossom is over, we get a plague of aphis on the plum trees and currant bushes. The result is, leaves dripping with honey-dew, and the bees finding this big source of income literally swarm on the trees. Again, the Flemish, English, red, and Morella cherry trees are often attacked by black aphis, and I have repeatedly seen the bees working on them; the same applies to the lime trees. The consequence is we get honey of various degrees of colour and flavour, according to the amount of honey-dew it contains. I have never seen bees in this district collecting honey-dew excepting where aphis is present, though I know there are trees and shrubs that do exude sweet juices through glands. For instance, the passion-flowers have from two to six glands on the petioles, and I have often seen the wasps working them, but never bees. I have also seen wasps working on oranges and lemons, but then there was always "scale" (coccida) present, which smothers the plants with honey-dew. I have always found the mixture of honey-dew and honey granulates as freely as pure honey, and is rather lighter in colour when granulated. Some years ago I had a hundredweight of very dark stuff not worth bottling, so I let it granulate, and offered it at 4d. per lb. It all sold in a week, and I believe I could have sold a ton. A few years later I had some not quite so dark, which I bottled in tie-over jars and sold at 6d. The Superintendent of Police, who was inspector under the Food and Drugs Act, hearing I was selling honey cheap, thought he had made a capture; but the county analyst certified it as pure honey, and I gained a customer, for he often sent for a jar of honey afterwards. I myself detest the flavour of honey-dew.

We have a very large tree of abele, or white-leaved poplar, on the lawn, and during June there were numbers of queen-wasps working on the upper surface of the leaves (in fact, thirty were killed on this tree). I examined a number of leaves, but could find not the slightest trace of insect or honey-dew; they seemed perfectly clean. A swarm of bees is located in a hollow limb of this tree, but not a single bee was working on the leaves, so what the wasps were after is a mystery. Last year we had very few wasps; this year there is a plague of queens, and I have killed some dozens in the glasshouses myself. I venture to think that if Mr. Baker had a few houses of grapes under his care he would slaughter every wasp in creation if it were possible.

If the hoya (Mexican honey-plant) could only be grown out of doors in this country, what a harvest we should reap! The flowers literally drip with honey. It appears to me that the more fruit there is planted, the more honey-dew we get. Twenty years ago I used to get splendid light honey fit for the show-bench, but now I rarely get a good sample.

In answer to Mr. Crawshaw (page 279), our bees always work both the red and white hawthorns very freely.—Elvey E. Smith, Southfleet, Kent.

EFFECTS OF BEE-STINGS.

[7865.] Your Cornish correspondent (page 277) seems to have suffered somewhat like myself from bee-stings, though I think I fared worse than he did. I was getting a cast into the skep one hot day in June, and got stung on the temple. The pain was so great that I hurried at once indoors, and collapsed. I became burning hot all over, with a tremendous tingling sensation, chiefly in my hands and feet. I could only breathe with great difficulty, and a sickness came over me that caused me to vomit. I drank cold water and had cold water rags applied to my head and neck, and in about thirty minutes I recovered sufficiently to go out and pick up my skep and bring it in. I attributed the trouble to faintness through my being so much in the sun, as

(*Continued on page* 288.)

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

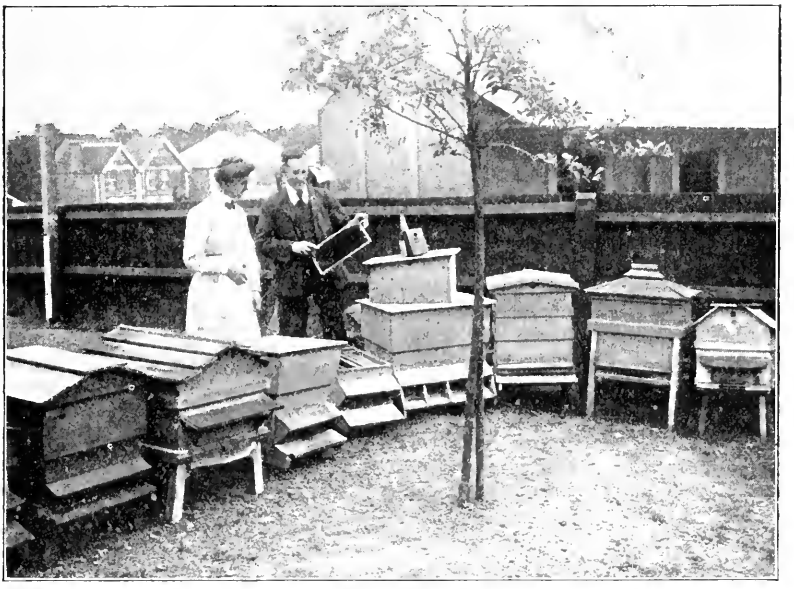
Mr. Gambrill's ably-written account of his bee-keeping experiences needs no addition from us to make it interesting to readers, who doubtless will find much to admire both in his perseverance and capability. He says:

"My first introduction to the bees occurred when I was about ten years of age, and it happened in this wise. My father did not keep bees himself, but he sometimes hived swarms to assist the curate, who lived next door and kept a few stocks, which he himself attended to. Working as I do to-day without gloves or veil, my mind wanders to this time—back in the sixties—and I picture his reverence armed for the fray. Trousers tied at the bottom, large straw hat, an overall veil tied at the waist, with huge bishop's sleeves. Very thick leather gloves completed the 'armour.'

"Now, while the curate would hive his bees on a week-day, he would not do so on a Sunday, and if a swarm came off he would come for my father to hive them, and it was on one of these Sundays I got my bee baptism. The bees had settled in a rather difficult place, and my father on the ladder could barely reach the cluster, and in shaking he got a few bees in the skep, while the 'bunch' came down on my unveiled ten-year-old bare head.

"I had an unsettled life until I came to live at Ascot, where I started a tailoring business. I bought my first swarm in June, 1893, and began to keep bees in earnest. I started an out-apiary like 'Lordswood,' though, for good or evil, I had no 'Jack Bannell' in charge (see B.B.J., vols. xxvi. and xxvii). I also had my ideal of a hive, and built one, but it was not so far advanced as 'Lordswood's.' Some readers may remember 'Lordswood's' hive, with a spout and a handle. When you wanted honey you put a pot under the spout and turned the handle. Poor 'Lordswood.' How much one misses his racy contributions.

"My out-apiary came to an end by wilful destruction and robbery. Going to it one day in winter, to see how the food-supply was getting on, I found hives and accessories scattered in all directions: bees dead—perished with cold—and some hives stolen outright. The police discovered no clue to the marauders, but this occurrence extinguished my bee-fever; at least, I thought so. It seems, however, to have only smouldered, for it broke out again in all its fury about four years ago, and I now have many beginners, including ladies, under instruction, as well as taking care of about thirty hives for different people. I hold a third-class certificate, and am a member of both the British and the Berkshire Bee-keepers' Associations. The lady in the picture takes a very great interest in bees. For eight years she lived in Russia, but they had then no charm for her. She regrets she took no notice of the methods practised by Russian bee-keepers. She was, however, much in-



MR. A. G. GAMBRILL'S APIARY, BAGSHOT ROAD, ASCOT, BERKS.

terested in the article which appeared in the BEE JOURNAL of January 20, 1910, on bees in Russia.

"It will be seen my hives are very mixed, ranging from 'W.B.C.s' to those of my own make and design. I am also a society entertainer, conjurer, and raconteur, and have fulfilled many successful engagements in London and in various parts of the country. I fill up my time in winter in this way and the summer with bees, and find both hobbies remunerative and full of interest."

("*Effects of Bee-Stings*," *continued from page* 286.)

I had had many stings both on hands and legs, and never experienced a like sensation until Sunday last, when I unfortunately got stung again on the edge of the eyelid. I experienced the same suffering and sensations, and a friend said I looked as though I had developed a violent cold in the head.

Perhaps one of your medical readers will kindly give his opinion as to whether it is beneficial or otherwise to be stung when one feels the effects so much. I should also like to know if your correspondent suffers from any complaint, as I think that may perhaps have something to do with it.—ELTHAM, Kent.

WINTERING WITH SUPER IN POSITION.

WARM WATER FOR BEES.

[7866.] I have read with much interest the correspondence about wintering bees with a rack of shallow frames in position. I do not see what is to be done when one has contracted the brood-nest to, say, seven or eight frames.

I should like to winter one of my hives in this way, and would ask Mr. R. L., of Castle Cary (page 278), to be good enough to explain whether he tacks battens under the super on those parts that extend beyond the contracted brood-nest. I may mention that my hives are the usual "W.B.C." pattern.

By the way, the January number of the *Deutsche Illustrierte Bienen-Zeitung* describes a method of providing bees during the end of March and onwards through April with warm water by means of a tank, on the top of which a wooden grating floats, and which is placed above a closed box (having the necessary air-holes), in which an ordinary oil-lamp burns. The water is thus kept at a certain (but not too high) temperature. The writer of the article (and the inventor) uses it in his apiary, and originally introduced it to supply a want in his own apiaries.

Have you anything to commend in such a way of supplying water? In my opinion, in the spring it would prevent loss of heat to the water-carriers, and thus save much bee-life, and at the same time be at once ready for use in the hive.

I am going to obtain one and try it, but would like to know whether there is such a thing on the British market before sending abroad. The name of the inventor is E. Schroeder, Drochtersen, Prov. Hanover.—WEZ, Twickenham.

[The invention you allude to is that of M. G. Gendot, and was first described and illustrated in the *Apiculteur*, of Paris, for April, 1907. The illustration in the German paper mentioned is an exact copy of that described by M. Gendot. You will find a similar appliance illustrated on page 137 of B.B.J. for 1909, and anyone could make it from the description there given. There is a great advantage in giving bees warm water in the spring.—ED.]

HAWTHORN HONEY.

[7867.] In reply to Mr. Crawshaw's request (page 279), I may state that when the hawthorn was in bloom this year, on three days especially it yielded nectar copiously. I got up into a hedge for the purpose of taking bees from the hawthorn, and found they were very numerous and were without doubt gathering nectar from it, as could be seen both by their action and their distended abdomens.

Last year, although there was an abundance of blossom, I do not think it yielded any nectar, for though I frequently searched the bushes in the hope of finding hive-bees, I failed to discover any during the whole time it was in bloom, while very few wild bees visited the flowers.

I have had honey which had both the scent and taste of "may," but from observation I am led to the conclusion that the climatic conditions must be *very* favourable for hawthorn to yield any appreciable amount of honey, and these conditions prevailed on the three days mentioned.—GEO. HAYES, Beeston.

WINTERING WITH SUPER ON HIVE.

[7868.] In 1909 I took from one of my hives about 30 lb. of section honey, and then prepared the stock for experiment at the heather by putting on a box of eight full-size standard frames and a rack of twenty-one 1-lb. sections. The stock was then taken to the Mendip Hills, 700 ft. above sea-level, to a very bleak and cold place called Burrington Combe. Owing to my being taken ill, it remained there all the winter with a 6-in. wide entrance. I did not expect that the bees would survive the winter. The only protection on the hive in the way of quilts

was a sack doubled up on top. The stock was brought back to me last March, as I thought dead. I took off the rack of sections, which contained no honey; nor was there any in the super of frames, but to all appearance there was plenty of stores in the brood-chamber. The bees were all right, and out of my twelve stocks this is the best of all. The eight standard frames are at the present time full of honey, and the 21-lb. rack of sections is almost ready to be removed. I am only a bee-keeper of four years' standing, but shall always winter in this way, feeling sure by my experience that there is nothing gained by "coddling" bees.—A. Lucas, Bristol.

BEES IN LANCS.

A REMARKABLE SWARM.

[7869.] The bee-season in this district has so far proved an exceptionally good one, and if all goes on well our average "take" from an ordinary hive will be from 60 lb. to 70 lb. of honey. My own apiary is only a small one of ten stocks, five of which have swarmed. One of these swarms was the most remarkable I have seen in the whole of my bee-keeping experience. It came off on July 13 about noon, and when hived in a skep I found the bees alone weighed 10 lb. 5 oz. I had previously ascertained the weight of skep and floorboard, &c. It was not a case of two swarms joining together, and I consider such an abnormally large one worthy of note. I have tried many breeds of bees, but the parent stock from which the swarm came off is one of my favourites. They are English blacks, and I think I shall in future stick to this race as being the best of all.—J. Molyneux, Ulverston.

Echoes from the Hives.

My bees have not been to the clover at all, although there are quantities about. They preferred the blackberries until yesterday (July 7), when they deserted everything for the limes, which are blooming most extravagantly. The weather is most depressingly damp and cloudy. I think the following rain measurements here are about a record for July: 1st, .38 in.; 2nd, .01 in.; 3rd, .24 in.; 4th, .53 in.; 5th, 0; 6th, .64 in.; 7th, .12 in.; 8th, .10 in. Hope seems to be the only thing left for bee-keepers. The haymakers have doubtless lost even that.—H. G. M., Buckhurst Hill.

The keeping of bees is so entrancing, the problems of a scientific nature in connection with them are so varied and numerous that if there were no honey crop no one who has ever really caught "the spirit of the hive" would willingly give up bee-keeping. But in addition to above interests there are results of a practical nature, and as last season most of the honey in this district was as black as ink it is a pleasure to report that honey of good quality, in fairly large quantities, is being offered to us this year. I need hardly say that during the last few weeks the weather in Notts has not been all that the heart of a bee-keeper could desire; but three weeks ago a member of our association, living like myself in the suburbs of our great city, removed twenty-one finished sections from her one hive. What a splendid addition to the store cupboard, and how welcome even to those who are well off in this world's goods!—Thos. N. Harrison, Carrington, Notts.

Queries and Replies.

[4027.] *Obtaining a Market for Honey.*—I am a beginner in bee-keeping, but I consider that I have been very successful with the bees generally, having started with one stock three years ago, which has increased to three very strong ones. They have done well this year in producing some very good clover-honey, but I find some difficulty in disposing of my surplus. One of the stores in London offers 7s. per dozen only for honey in the best condition delivered free. I should prefer to give honey away than to sell it at such a price. The local towns near here—including Harrogate—have their regular customers, who supply the demand fully. Can you with your knowledge and experience give in the Journal for the benefit of your readers generally, as well as for myself particularly, hints as to the best markets and the average prices which may be realised?

In regard to heather honey, the stores referred to state that they have no sale for it—a rather surprising statement in view of the high prices obtained by some of your contributors. If the markets are already overstocked it seems misleading to induce more people to take up bee-keeping as a paying industry. Any possible assistance will be much appreciated by—Inquirer, Ripon.

Reply.—So long as we have to import honey to the value of over £30,000 a year it is clear that the market is not overstocked with British honey. The difficulty has been in getting a regular supply, and those bee-keepers who can furnish this have generally no difficulty in disposing of their surplus honey. There is always much more difficulty in selling a few sections, and a market for these should be found locally. Dealers do not

care to have small lots of different qualities, because customers expect to get the same sort of honey as they have purchased previously. It must also be remembered that section-honey is a fancy article for which there will always be a smaller demand than for extracted, but we are not aware that at the present time the market for sections is overstocked. A great deal of honey is sold through advertising in the B.B.J., and probably if you adopted this means you would be able to find a customer for yours at a better price than you mention. The retail value is from 9d. to 1s. a lb. section, out of which the dealer must get his profit and allow a margin for waste and loss. There is a very limited sale in London for heather-honey, and you would do better with it in Glasgow or Edinburgh, where they are more accustomed to the flavour. When we have a larger number of bee-keepers so that the production of honey can be largely increased and the supply become regular, we should then have a more staple market for the product.

Bee-Shows to Come.

July 20 and 21, at Cardiff.—Annual Show of the Glamorgan B.K.A., in connection with the Cardiff and County Horticultural Show. Separate tent for honey, wax, appliances, &c. Hon. Sec., Mr. W. Wiltshire, Maindy Schools, Cardiff.

July 21, at Southwell.—Annual Show of the Notts B.K.A., in connection with the Horticultural Society's Show. Open class for Single 1-lb. Jar. First prize, 20s.

July 21 and 22, at Leek.—Annual Show of the Staffs B.K.A., in connection with the Staffs Agricultural Society. Six open classes. **Entries closed.**

July 26 to 28, at Leeds.—Show of Honey, &c., in connection with the Royal Yorkshire Agricultural Society. **Entries closed.**

July 28, at Middle Wallop, Hants.—In connection with the Horticultural Show. Open classes for Honey: Best 1-lb. Jar Extracted, Best 1-lb. Section. (Entry free.) Schedules from Pryce E. Roberts, Schoolhouse, Nether Wallop, Stockbridge. **Entries close July 21.**

July 28, at Tiverton.—Devon B.K.A. Show of Honey, Bees, Wax, and Appliances, held in connection with the Annual Exhibition of Tiverton and District Agricultural Society. Open Classes, Special Prizes. **Entries closed.**

August 1 (Bank Holiday), at Bromley. Show of Honey in connection with the Bromley Flower Show. Four open classes. Two Special Hives offered. Schedules from Alex Gunner, Hon. Sec., 91, Park End, Bromley, Kent. **Entries close July 30.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. Schedules from Hon. Sec., Mr. E. F. Dant, 52, Bridge Street, Cambridge. **Entries close July 28.**

August 1 (Bank Holiday), at Melton Park, Melton Constable.—Annual Show of the North Norfolk B.K.A. Four Open Classes, including one for Single 1-lb. Section and one for Single 1-lb. Jar of Honey. Schedules from Miss Leaven, Letheringsett, Holt, Norfolk. **Entries close July 23.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close July 23.**

August 3 and 4, at Abingdon Park, Northampton.—Honey Show of the Northants B.K.A. Special prizes for open classes, including one for single 1-lb. jar honey. (Entry free.) Judge, Mr. W. Herrod. Schedules from R. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close July 26.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Llanerchymedd, Anglesey.—The County of Anglesey Beekeepers' Association offer the following prizes at their Annual Show. For the best six 1-lb. jars of 1910 Honey, 10s. 6d.; open to all. Entrance fee, non-members 1s. 6d., members 1s. For the best and most attractive display of Honey and Honey Products, £1 1s.; open to North Wales; entrance fee, non-members 2s., members 1s. 6d. N.B.—Only half the prize will be given unless there are three or more exhibitors. Schedules from Rev. O. Kyffin Williams, Coldana Vicarage, Llanerchymedd. **Entries close July 29.**

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 10, at Wye, Kent.—Kent Honey Show. Four open classes, fifteen open to Kent. Trophy, cup value 3 guineas, two Challenge cups value 6 guineas each, one Challenge cup value 5 guineas, numerous other Special and money prizes. Special classes for Cottagers, also class for Members of Ashford and District Bee-keepers' Association. Schedules from H. C. Chapelow, Hon. Sec., Wye, Kent. **Entries close August 1.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A.

will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

WEATHER REPORTS.

WESTBOURNE, SUSSEX.
June, 1910.

Rainfall, 3·25 in.
Above average, 1·16 in.
Heaviest fall, 1·05 in. on 9th.
Rain fell on 15 days.
Sunshine, 217·1 hours.
Below average, 17·9 hours.
Brightest day, 14th, 15·2 hours.
Sunless days, 1.
Maximum temperature, 74° on 8th and 20th.
Minimum temperature, 40° on 4th.
Minimum on grass, 39° on 4th.
Frosty nights, 0.
Mean maximum, 66.
Mean minimum, 51·2.
Mean temperature, 58·6.
Above average, 1·5.
Maximum barometer, 30·371 on 18th.
Minimum barometer, 29·619 on 5th.

L. B. BIRKETT.

BARNWOOD, GLOUCESTER.
June, 1910.

Rainfall, 2·68 in.
Above average, ·58 in.
Heaviest fall, ·54 in. on 7th and 9th.
Rain fell on 15 days.
Total to date, 12·89 in., as compared with 10·49 in. for the corresponding period of last year.
Mean maximum temperature, 67·5; 1·5 degrees below average.
Mean minimum temperature, 50·3; ·7 of a degree below average.
Warmest day, 20th, 79.
Coldest night, 13th, 39.
Relative humidity, or percentage of moisture in the air, 74.
Number of days with sky completely overcast at 9 a.m., 8; do. cloudless, 2.
Percentage of wind force, 20.
Prevailing directions N.E. and S.W.

F. H. FOWLER (F.R.Met. Soc.).

JUNE RAINFALL.

Total fall, 5.37 in.
Above average, 2.87 in.
Heaviest fall in 24 hours, 1.50 in. on 5th.
Rain fell on 18 days.
Total fall from January 1, 18.61 in.

W. HEAD, Brilley, Herefordshire.

Notices to Correspondents.

BEGINNER AERON (Aberayron).—*Dealing with Transferred Bees.*—1. As the bees have taken to the lower chamber in which there is now brood, your first object is to satisfy yourself that the queen is below. 2. If all the combs are occupied with brood and honey so that there is no room for the queen to lay, extract some of the honey to give her the necessary accommodation. 3. Remove the skep and put excluder on the frames, then drive all the bees and make sure of getting the queen, and throw bees in front so that they may enter their hive. Then place the skep on excluder, when sufficient bees will go up to care for the brood, and in twenty-one days the skep can be removed. Cover up the space not occupied by the skep, give plenty of ventilation, and remove any queen-cells you may find. 4. The bee sent is an imperfect drone, the pigment being wanting in the eyes, which gives them the white appearance. 5. If the bees are still clustering outside it is a sign that they require more room and you might give them a set of shallow frames below brood-nest, placing this above when the skep is removed.

R. W. (Rutherglen).—*Foul-brood Legislation.*—The point you raise has been fully answered on page 226 of B.J. for June 9 last. No one expects foul brood to disappear entirely in a few years, but he must be a very obstinate person who supposes that "when once this Act has become an accomplished fact foul brood will not become *less* prevalent throughout Britain." It is contrary to the experience of all those countries that have adopted legislation, and if foul brood has not been entirely exterminated it has been so reduced as to be an exception, and not the rule. Why those who oppose legislation should think we cannot do in this country what has been satisfactorily accomplished in other countries we are at a loss to understand. The question as to whether there should be legislation is now in the hands of bee-keepers, and steps are being taken by the committee appointed for the purpose to ascertain their wishes on the subject.

J. W. L. (Portinscale).—*Dead Queen.*—The queen sent is unfertilised.

A. S. (Eastleigh).—*Starving Bees.*—The bees sent appear starved, as there is no food in their intestines, and only one had some pollen.

C. L. R. (Rickmansworth).—*Isle of Wight Disease.*—There is no known remedy for this, and where there are other hives destruction of the affected colonies is

recommended, as the disease is said to be extremely contagious and spreads rapidly to other hives. Any dead bees on the ground should be picked up and burnt, and the ground disinfected with a solution of Calvert's No. 5 carbolic acid, 1 oz., to 2 quarts of water. For full particulars of the disease please refer to B.B.J. for March 18, 1909, page 101, where there is a summary of Dr. Malden's investigations.

A. E. P. (Hanwell).—*Dead Bees.*—The bees are evidently suffering from starvation, as there is not a particle of food in their stomachs. With such unfavourable weather as we have had since you had your swarm 11lb. of syrup would not last long, especially if the swarm was a strong one.

C. E. W. (Barnes).—*Ailing Bees.*—The bees are suffering from abdominal distention, the bowels being filled with undigested pollen. Probably with an improvement in the weather they may get over the trouble. The shade of the trees would not affect them.

J. C. K. (Ashford).—*Suspected Isle of Wight Disease.*—1. Only one bee in No. 1 could be examined, and this was found to be suffering from abdominal distention judging from the amount of undigested pollen in the bowels. No spores could be detected, so cannot say if it is Isle of Wight disease, but from your description it may either be that disease, May pest, or bee-paralysis, as all these complaints have similar symptoms. 2. The bees were all drowned in the food, and in such a sticky mess that nothing in the way of examination could be done. It is best to send the bees without food.

J. T. (Buckley).—*Dead Queen Cast Out.*—The queen is a virgin.

Honey Samples.

Amateur (Bridport).—Honey is a very dark sample gathered principally from beans. The flavour is fairly good and it is good in consistency, but the colour makes it only a second-grade article. About 45s. per cwt.

Suspected Combs.

Fossil (Leicester).—The disease with which the comb is affected is *sour* brood, not foul brood. See "Guide Book" (chapter on diseases, page 183).

M. C. C. (Bucks).—A bad case of sour brood and foul brood combined.

F. S. (Herts).—1. There is no disease in the comb, the brood has been chilled, and from the appearance of bees we should say they have died of starvation. 2. The queen is a virgin.

Salopian (Shrewsbury). The comb is affected with foul brood.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, July 21, at 11, Chandos Street, Cavendish Square, when Mr. W. F. Reid presided. There were also present Messrs. J. Grimwood, O. R. Frankenstein, T. Bevan, G. H. Skevington, C. L. M. Eales, J. B. Lamb, R. Andrews, A. Richards, E. Walker, R. H. Coltman (Derby), E. V. Shaw (Crayford), A. W. Salmon (Suffolk), F. W. Watts (Beckenham and Bromley), and W. Herrod (secretary).

Letters expressing regret at inability to attend were received from Mr. T. W. Cowan, Mr. A. G. Pugh, Rev. A. D. Downes Shaw, Mr. E. Garcke, Mr. G. W. Avery, Miss Gayton, and Mr. J. N. Bold.

The minutes of the Council meeting held on June 16 were read and confirmed.

The following new members were elected: Mr. W. Thorne, Babraham, Cambs; Rev. W. H. A. Walters, The Rectory, Treffgarn, Pembrokeshire; Mr. J. Price, Haden Hill, Old Hill, Staffs; Mr. J. H. Hadfield, Hamilton Place, Alford, Lincs; Dr. W. Anderton, Mansion House, Ormskirk, Lancs; Mr. N. Grant Bailey, Wadenhoe, Hough Green, Chester; Mr. C. J. Ashworth, Schoolhouse, Heytesbury, Wilts; Mr. F. A. Ashworth, Schoolhouse, Heytesbury, Wilts; Mr. A. W. Grant, Derby Road, Huyton, Lancs; Mr. J. T. Barber, Mere Farm Apiary, Nether Alderley, Chelford; Mr. J. Vicars, Gillbank, Boot, Cumberland; Mr. H. C. Jones, Monks Acre Apiary, Andover, Hants; Mr. E. L. Jones, Monks Acre Apiary, Andover, Hants; Mr. H. G. Tunstall, Ashfield, Rainhill, Lancs; Mr. A. C. Jones, Union Workhouse, Ipswich; Mr. G. W. Cobb, Woodside, Garston, Herts; Mr. A. L. C. Fell, Longwall, Walton-on-Thames.

The South Beds Bee-keepers' Association applied for affiliation and were accepted.

The report of the Finance Committee was presented by Mr. Skevington, and it was resolved that payments be made amounting to £74 13s. 9d. The receipts for the month amounted to £43 16s. 6d., and payments to £23 15s., leaving a balance in hand of £124 7s. 5d. Mr. Lamb proposed and Mr. Eales seconded that the *Apis Dorsata* Fund of £20 be paid into the Post Office Savings Bank to reduce the debt of £50 on "Modern Bee-keeping" to £30. As a considerable saving could be effected on the purchase of medals in quantity, the committee recommended that this be done in future.

The recommendations of the committee were accepted. The report of the judges at the "Royal" Show at Liverpool was presented by Mr. Eales, and the secretary was instructed to send it to the Royal Agricultural Society.

The examiners' reports on third-class examinations at Henwick, Liverpool, Ely, and Carlisle were submitted, and it was agreed to grant certificates to the following: Misses D. Prestige, E. Caskey, M. Henry, M. Blatchley, A. Foster, E. Clark, E. Prestige, M. Henry, F. Walker, J. Clark, I. Penny, H. M. Frost, Captain F. Sitwell, Dr. W. Anderton, Messrs. W. Miller, J. Lambert, A. J. Blakeman, J. T. Barber, H. Stubbs, F. Hatton, N. Grant Bailey, A. W. Grant, T. N. Harrison, J. E. Smiles, I. Farquharson, T. Hartley, J. Steel, J. J. Grien, S. Gordon, and F. P. Cheesman.

One candidate presented himself to lecture for first-class examination, but failed to satisfy the Council.

The date of second-class examination was fixed for November 12.

The Rev. A. D. Downes-Shaw wrote complaining of the bad arrangements for the examination at Ely, suggesting that secretaries of associations be circularised giving them instructions as to what should be done. The secretary was instructed to draw up a circular of such instructions to be submitted at the next meeting.

Examinations for third-class certificates at the following centres were sanctioned: South of Scotland B.K.A., Northampton, Melton Constable, Studley, and Luton.

Judges were also approved for Stafford, Woolef, Melton Constable, and Northampton.

Acknowledgment and thanks for letters of sympathy on the death of King Edward VII. were received from Queen Alexandra and King George V., and it was resolved to place the same on the minutes.

The next meeting of the Council will be held on September 15.

NOTTS B.K.A.

ANNUAL SHOW.

The Notts B.K.A. annual show was held on the 21st inst. at Southwell, in connection with the Horticultural Society's show, under ideal weather conditions. This proved to be the largest show of honey, bees, and appliances ever held in the history of the association, the number of entries and of exhibits staged being a record one. The trophies and collections of appliances made a good display, and altogether the association may congratulate itself upon a distinctly successful exhibition. Dr. P. Sharp, Brant Broughton, and Dr. Elliot, Southwell, were the judges, their awards being as follow:—

Collection of Bee-appliances. — 1st, Thos. W. Harrison and Sons, Nottingham; 2nd, W. Mountney, Southwell.

Honey Trophy.—1st, W. L. Betts, Mansfield-Woodhouse; 2nd, Uriah Wood, Arnold, Notts.

Twelve 1-lb. Jars Light Extracted Honey.—1st, Hy. Hill, Carlton-le-Moorland; 2nd, J. T. Duckmanton, Langwith; 3rd, W. L. Betts; 4th, Geo. Marshall, Norwell; v.h.c., G. H. Pepper, Oxton, Southwell; h.c., R. C. Craven, Southwell; c., W. Doleman, Keyworth.

Twelve 1-lb. Jars Dark Extracted Honey.—1st, W. L. Betts; 2nd, T. Gillott, Sherwood; 3rd, G. Marshall; 4th, W. Lee, Southwell; v.h.c., J. R. Almond, Cotham; h.c., J. Breward, Staythorpe.

Twelve 1-lb. Sections.—1st, G. H. Pepper; 2nd, J. T. Woods, Nettleworth, Mansfield; 3rd, Geo. Marshall.

Twelve 1-lb. Jars Granulated Honey.—1st, Geo. Marshall; 2nd, H. Merryweather, Southwell; 3rd, J. T. Woods; h.c., W. L. Betts.

Three 1-lb. Jars Extracted Honey and Three 1-lb. Sections (amateurs only).—2nd, T. Gillott.

Single Shallow-frame of Comb-honey.—1st, R. Mackender, Newark; 2nd, W. L. Betts; 3rd, G. Marshall; v.h.c., Uriah Wood; h.c., H. Mackender.

Observatory-hive.—1st, G. Marshall; 2nd, R. Mackender; 3rd, E. G. Ive, Boughton; 4th, W. L. Betts.

Beeswax.—1st, A. H. Hill, Balderton; 2nd, Geo. Marshall; 3rd, John Bee, Southwell; v.h.c., Uriah Wood.

Extracted Honey (local).—1st, J. Breward; 2nd, G. Noton, Southwell; 3rd, W. Lee.

Single 1-lb. Jar Honey (open to all).—1st, H. W. Saunders, Thetford, Norfolk; 2nd, W. J. Cook, Binbrook, Market Rasen, Lincs; v.h.c., R. W. Lloyd, Thetford, Norfolk; h.c., G. H. Pepper.

Mr. Geo. Marshall, of Norwell, was awarded the "Herrod" Silver Challenge Vase for the highest number of points.—GEO. HAYES, Hon. Sec.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SOUTH AFRICAN BEE.

[7870.] I read the letter on the South African bee (7831) by Mr. Henry Martin in your issue dated June 2 with great interest, being a bee-keeper in South Africa.

The native bees here in the Transvaal, at least all I have handled, are decidedly quiet and of a good temper, also working very well on the whole. I have noticed the peculiarity Mr. Martin mentions of their piling up quantities of propolis just inside the entrance of the hive, and in the case of my apiary I think it is on account of the severe and strong winds prevalent here during the months of June, July, and August—and September, too, at times—these being our winter months.

With reference to the removing of dead bees from the entrances, I have not noticed this peculiarity; in fact, my bees—wild ones from the veldt—seem to take no notice of their fellow-bees who may be lying dead around the entrance, for in the fall I often see quite a number of dead drones in front of each hive, and there they remain, unless carried away by insects or the wind.

During one swarming season I endeavoured to unite a swarm with a queenless stock, but they would have nothing to do with the newcomers, and killed great numbers of them when they tried to effect an entrance to their (the queenless stock's) hive. I gave up the attempt, fearing lest my swarm should be quite destroyed. The bees killed remained near and around the hive for days, until I cleared them away myself. Thus in this detail the native bees of the Transvaal differ from those found in Natal. The climate may have something to do with this, as in Natal the heat is at times very moist, while here the climate is drier. The bees left dead around the alighting-board are very often carried off by an insect not unlike a bee, only that it always flies in a very quick, excited manner, never rising and falling, but always horizontally, gradually descending to the earth. These insects drag the dead bees into small holes made in the earth near the hive.

Hoping these remarks are not too lengthy, and trusting that this season may prove successful and good.—MARY W. JOHNSTONE, Roodekop Station, Transvaal.

STRANGE CONDUCT OF A SWARM.

[7871.] I think you will agree that the following was rather a strange procedure for a second swarm. On Saturday, July 9, I was informed that a swarm of bees had been seen going in the direction of my garden, and on making a search I could not find them, but eventually discovered them in a cluster in the next garden. A high hawthorn hedge divides the two gardens. They were a small lot—I should say about a quart of bees.

I shook them into a skep, and raised it in front by means of a piece of wood, to enable the flying bees to enter, which they did in about half an hour. I then took them to another garden, where a modern frame-hive with eight drawn-out combs was prepared for their reception, and

shook them in front of this on to a cloth. I saw the queen, and tried to guide her to the entrance; but she got on the wing, and was flying for five to ten minutes, part of the bees joining her, but eventually she alighted and entered the hive. In the evening I fed them with a quart of warm syrup.

On Sunday the weather was dull all day. The bees flew very little.

On Monday, about twelve midday, they all swarmed out again, going back to the garden we fetched them from at first, and alighted in a hawthorn hedge.

I shook them into the skep again, and placed it in position for flying bees to enter. In about an hour's time they all swarmed out again, and alighted in a bush apple-tree, where they stayed about an hour, when they again swarmed and alighted in another apple-tree, where they stayed some time. They swarmed from this tree and alighted in the hedge just where they had settled on the previous Saturday.

Altogether they were in the air five times. I shook them in the skep and left them until about eight in the evening, when they were hived in the frame-hive again. This time I gave them a frame of brood, and they are now going on very nicely.

Can you give me an explanation of above? I think myself the queen must have been on her mating flight.—T. H., Long Eaton.

[It is not unusual for casts to behave as yours did. No doubt the scent of the queen on the first position occupied induced them to settle there again. Your surmise that the queen was on her wedding trip is correct. Had you placed unsealed brood in the frame-hive in the first instance most probably the bees would have remained. It is a good plan to do this when hiving casts, or even swarms, to ensure their remaining in the hive.—Ed.]

"ISLE OF WIGHT BEE-DISEASE."

[7872.] It may interest some of your readers to hear the result of certain experiments carried out in my apiary in the midst of colonies suffering from the "Isle of Wight disease."

Early in July, 1909, I purchased from Mr. F. W. L. Sladen, of Ripple Court, a nine-comb colony of British Extra Golden bees and a three-comb nucleus, without a queen, of his British Golden bees. This nucleus was allowed to rear its own queen, and swarmed at the beginning of last August.

Early in August a further nine-comb colony of British Extra Golden bees was purchased, and also placed in the apiary amidst the diseased colonies, and a comb containing eggs and young brood was inserted into the first nucleus from which the swarm had issued. This nucleus raised a new queen, and went into winter quarters with frames full of brood.

Two virgin queens (British Goldens) were also purchased from Mr. Sladen in July, 1909, and introduced into hives suffering badly from "Isle of Wight disease." Both of these queens mated and went into winter quarters strong with young bees. Two lots of driven bees were purchased and placed in hives upon combs taken from diseased stocks.

The following are the results:—

1. Stock of British Extra Golden purchased early in July (queen in her third year), strong in bees, perfectly healthy, stock working in two supers.

2. Swarm from nucleus. This hive was artificially swarmed in May, both stocks doing splendidly.

3. The nine-comb colony purchased in August, 1909, swarmed June 26 last, sending off the largest swarm I have ever seen. The bees had been delayed from swarming by unsettled weather. Hives and bees in perfect condition. Three nuclei were formed from parent hive after swarming.

4. The young queen hatched from the nucleus (after swarm had left) in August, 1909, produced a remarkably strong colony, and swarmed on June 6 last (two nuclei formed from the parent stock), all bees in perfect condition. This stock sent off another strong swarm on the 16th inst.

5. Of the two virgins mated from diseased hives, one stock perished from dysentery (wintered upon unsealed stores), through being fed up too late in autumn. The other stock, when inspected in May last, was found to have wintered badly, was weak in bees, but otherwise healthy. This queen, with bees and frames, was inserted into the stock without a queen when the artificial swarm was made in May last. This stock is in perfect condition, and so strong in bees that I have been compelled to raise the brood-box on blocks to give extra ventilation.

6. *Driven Bees.*—One stock perished (roof carried away by storm in February last). The other stock has done exceedingly well, but cannot show the results obtained from Mr. Sladen's bees.

The results obtained confirm my view that the "Isle of Wight bee-disease" is not contagious.—William M. Yetts, Woking.

MID PIKE AND FELL.

[7873.] I have seen—I cannot at the moment remember where—a wonderful picture of the "Plains of Heaven," and doubtless it is familiar to many of your readers as an engraving reproduced from the original. My road to-day leads me where 'tis said the artist took his stand to create this masterpiece. It is typical

of many panoramas which are to be found in this comparatively little-known county. The Swiss lakes and mountains, the castles of the Rhine, the shores of the Mediterranean Sea, even the waters of "Old Nile," are familiar to the "tourists" manufactured by the organising companies of the day. "To know England, go abroad" is an axiom full of truth. He who has seen no country but his own must needs be lamentably ignorant and insular. Yet it seems unkind to his native country—unpatriotic I could almost call it—that anyone who has the leisure for "globe-trotting" should not be able to devote a little time to the beautiful scenery of his own land.

Snort and puff and heavy throb. The engine would fain move its load. But snow is falling, and the rails are slippery. Whirl! The wheels will not bite. Sprinkle sand in front. Now we start. Thump and thud! Thump and thud! The gradient is one yard in sixty. Our iron horse, though tireless, is hardly equal to the task. Yet on we creep. Slowly we mount the Pennine Hills. But we heed not the delay. We rather welcome it, and our wonder is that the line was ever made. Look how the landscape spreads! Will not the train go even slower in order that we may dwell on it? One thousand three hundred and seventy-eight feet above sea-level!—the highest point in England that railway touches. We cross Beulah Viaduct, and giddily crane our necks to see the abyss below. We are at Barras Station, where our call is to be made, so no further travel by rail this day. Yet if we were going further, as far as the Yorkshire border, we should find a country full of interest. Stainmore (stony moor) is "a wild and desolate desert," as Sir Daniel Fleming wrote in 1677, "crossed by coaches from Brough to Bowes twice weekly with danger of overturning and breaking." Yonder is Rerecross (rear cross) or, as the Scots called it, "Roy-cross," where William the Norman spread his barons over Saxon England, and that nothing might escape his greedy clutches caused clever "clerks" to make a record in his Domesday Book of every hide of land, of the holders, of how many were plough lands, and of how many swine were capable of being fed in the woods there. "Rerecross" was the boundary between England and Scotland, and here was the limit of his surveys. Cumberland and Westmorland were too restless, and so he let the Scots have them "as tenants," and on condition that they should do no harm to England.

How foolish of me to have been tempted by that gleam of sunshine to essay my work! Scarce has yon bird, similarly tempted, commenced his song, and begun to consider where he may build his nest, when forthwith hailstones of the size of marbles cut his carol short, and send him scudding to the nearest cover. Another day of enforced idleness so far as bees are concerned. Let me make a virtue of necessity. I cannot work, so I will walk the six miles. I only got a passing view of the "Plains of Heaven" as the train struggled along the hillside; perhaps as I return I may get a more leisurely view.

Down the steep hill (no wonder the coaches were in danger of being overturned—how did they possibly climb it?), across the moor through Kaber (I have a story to tell of this village in my next unless I tire your readers) and Winton, above Hartley and its castle, and at last I am rewarded. Willingly I would reckon as nothing another similar march, if it had been needed, to obtain this glorious view.

I am standing as if on a terrace on the mountain side. To my left sweep the long chain of the Pennines, whose summits, just capped by the snowstorms passing over, look now bright, now grim, as alternate sun and shadow of wind-driven clouds illuminate and darken. Below me (I can hear the old church clock strike the hour) is Kirkby Stephen. Southerly Ash Fell limits the view, but in the distance, over Ravenstonedale, mountain source of the Lune, I catch a distant glimpse of Coniston. Shap Fell, the roughest and steepest stretch of seven miles 'twixt Scotland and London, carries the chain of encircling hills until, south-by-west, fifty miles away as the crow flies, Skiddaw and Scafell rear their pointed cliffs over Derwentwater. At my right Muckle Fell and Cross Fell, stretching northwards, complete the crescent. Penrith Beacon lies 'twixt the two horns, but over it, far away, I can see the level country stretching to Solway. And the valley! The plains! Swelling hills and verdant pastures. Eden winds its sinuous course, silvery here and there as the sun strikes it. Brough Castle, outpost of the Roman Empire, is at my feet, and 'neath yonder weather-beaten crags winds the road the Romans made. The blue smoke of Appleby lends another shade in the colouring. The low of the kine and the bleat of the lamb, upward rising, tell their tale of peace and happy grazing herds, and my sorrow is that the Muse who guides the painter's hand has not given to me also the power to limn this glorious scene "mid pike and fell."—J. Smallwood, Hendon.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Injudicious Feeding.—One of Messrs. Root's managers, with a very wide experience, says, "I believe there are barrels

and barrels of sugar fed to colonies and nuclei when the bees would have been better without it." That is so. Early feeding starts early breeding. Then if the weather chills the brood perishes from want of care and attention owing to the contraction of the cluster. This is thrown out, and further supplies are given to be stored in the emptied cells. The bees prefer to go on storing in empty cells when a flow ensues, and it is most difficult to persuade them to take possession of supers.

Per contra, *Gleanings* reports that many colonies strong and well provided with food in early spring went under later from sheer starvation. That is where very many err on this side. They think a stock which has survived the rigours of winter is all right in early summer, ignorant of the fact that its very strength and vigorous breeding prove its undoing even in June. Several excellent stocks went down rapidly to the verge of extinction this season. The splendid early spring and fine June were followed by a fortnight of inclement weather, when starvation was barely staved off by a fortunate change on July 8. Only after this date were supers well taken to.

Excluder.—"The trouble is so little that I never think of using excluders," says Dr. Miller; "but the sections must be filled with foundation, else drone-comb will bring brood and pollen to the supers." The Editor agrees. "We are quite prepared to admit that, when running for comb-honey, there is very little need of excluders."

Burr-combs.—Somebody recently expressed surprise that I should admit having any brace-combs above my frames. I rather like a few pieces to act as winter tracks in lieu of any patent device. I always scrape them off in spring, and the small triangular scraper does the work expeditiously and well. Some, it seems, retain them as a permanent adornment. Here is what the Editor of the *Review* says: "In all sincerity I would like to ask, Why scrape burr-combs off top bars? It is something that I have never done, and if there is anything to be gained by it I would like to know it." I rather think the advice here would be clean frame-tops every spring before supering, and I think the advice is wise.

Odour.—I again dissent from Mr. Hutchinson in his conclusion that odour is a negligible quantity in introductions. The following, I think, is an heretical doctrine: "The only moral I can draw from (certain statements he makes) is that in introducing queens we can entirely disregard odour as a factor in the problem." It is *always* a prime factor, unless you give a *quid pro quo*.

Painting Hives.—A writer in a recent issue of the B.B.J., breathing the spirit of some old Border ancestor, predicted that the genial Dr. Miller would crush me as if between the upper and nether millstone over this question. Just as I should have predicted, this prince of good fellows in the latest issue of the *American Bee Journal* comes up smiling, and actually signs a permit for me to go on painting my hives, admitting that they do look better and last longer. Altered circumstances alter the case, and he therefore pleads for permission to go on without painting. It is hereby granted with right goodwill. It is nice to agree; but it is even nicer to agree by differing.

Ohio Foul Brood Act.—This is the newest and most up-to-date Act for the suppression of this bane of a bee-man's bliss, and it enacts that hives and appliances should be *disinfected*. I add no comment. "To paint the lily or adorn the rose is wasteful and ridiculous excess."

"*Chunk Honey.*"—This resurrection of the bulk honey produced by our forefathers from old bee-trees, old straw skeps, and box-hives inspires Mr. Louis Scholl to air his eloquence in rhyme, illustrated by some of these antediluvian homes of the bees. I trust the innovation will not find its way over here.

Full Sheets.—The same writer goes strong in favour of full sheets of foundation all the time. "Experience has taught me to use full sheets of foundation at all times, both in supers and brood-chamber. *It pays, and pays big.*"

An Old Friend of Apiculture.—I have much pleasure in quoting the following from the *Australian Bee-keeper*: "His Excellency Sir Thomas Gibson-Carmichael has accorded his patronage to the Victorian Bee-keepers' Association. It had come to our knowledge that he had taken a very lively interest in bees and bee-keeping in Great Britain, and in reply to our request that he should become a patron he stated that he still maintained an interest in the subject, and hoped to be present at the Conference." Sir Thomas will be remembered by many as the moving spirit in inaugurating and carrying on the now defunct Scottish Bee-keepers' Association, and he later held a seat on the Council of the British B.K.A.

Temper in Bees.—In a recent article I commented on the vicious behaviour of certain strains of Italians, and quoted Quinby as to their "lightning thrusts." Mr. Holterman, Canada, rather commends this trait, and considers it shows "their strong, virile, and active character." I cannot see it in that light. Ill-temper is a destroyer of force and energy. The choleric man is never a strong man. His excitability unnerves him, and although he can do smart, active deeds, he has not backbone enough to do deeds of endurance. So

with the bee. The irascible bee wears itself out unnecessarily, spends its strength on what profits not, and lags far behind the one which acts coolly, deliberately, and rationally.

Queries and Replies.

[4028.] *Ownership of Swarm.*—Will you advise me on the following matter in B.B.J.? I have eight stocks of bees in bar-frame hives, one of these being a double hive, and too heavy for taking to the moors. I put the bees into single hives, and the double one (untenanted) outside the garden fence. On July 12 one of the stocks swarmed and entered this hive. My wife and I being away from the house when this happened, a neighbour who saw the swarm enter wants to claim it. Who is the rightful owner?—G. P., Hazlerigg.

Reply.—If it was your neighbour's stock that swarmed and entered your empty hive, and he followed without losing sight of them, the swarm is his, and if you refuse to let him have it he can sue you in the county court for its value. If, however, as we gather from your letter, the swarm issued from one of your own hives, then, of course, it is your own property.

[4029.] *Swarm Returning to Parent Hive.*—Will you kindly favour me with a reply to the following queries in your esteemed paper? 1. I had a very large swarm a few days ago, which settled on a bush quite near the parent hive. I put a straw skep over it, and flattered myself that all was going on well, when suddenly, without the slightest cause so far as I could see, it (the swarm) rose in the air. For nearly half an hour the bees remained on the wing, spreading in all directions. I had given it up for lost when, just as suddenly as they had left, the bees came back to the same spot. 2. Again they began to cluster—probably half of them settled—but eventually they returned *en masse* to the parent hive. There remained only a handful of bees on the ground, and among these I found the queen in a moribund condition. The bees seemed to me to be engaged in "balling" her. I picked her up, but could find no trace of injury or crushing, or anything of that sort. I tried to make her re-enter the parent hive, but as I found she was unable even to crawl I destroyed her. 3. Do the bees ever "ball" a queen when swarming? My poor queen deserved a better fate. She was in her second season, and had been the mother of a splendid progeny. I have now three racks of sections on the hive, and they are crammed with bees. Two of them were half finished when the swarm came off. 4. On opening the brood-nest I found a splendid mass of brood and four queen-cells. I cut these all out but one. Ought I to have done this? As my aim is honey—the heather is now almost upon us—should I have given at once a fertile queen? 5. I started with one stock two summers ago. My first swarm came off on a beautifully mild day, but returned to the hive. I found the queen on a bunch of grass not a yard from the hive, and returned her. The swarm issued again the day following. The bees settled quite near at hand on the branch of a young tree—all but half a dozen at most, which I found on the ground about a yard away, gripping the queen by the legs and holding her down. Whenever she made an effort to fly these seized her and held her fast. I have heard of ants doing this. Is it usual among bees? I covered the queen with a skep, and in a few minutes the whole swarm had entered. Now this queen's daughter led off a second swarm in due time, and I found her promenading on the top of a wall, whilst the bees were spread out like a flock of sheep all over the cabbage-patch adjoining. I had the greatest difficulty in getting them together, and I saw only one queen. This queen is the unhappy heroine of the sad episode I have related in the first half of this letter. Rather a curious concatenation of circumstances. I have now a number of stocks, and it may interest you to know that here in the highest village in Scotland—nearly 1,200 ft. above sea-level—the bees seem to flourish well, and even in a bad season like last year did as much as, or perhaps even a little more than, the bees of many who are situated in more genial localities.—J. T., Tomintoul.

Reply.—1. The queen was not with the cluster when you hived it in the straw skep, and this was probably the reason why the bees left and endeavoured to cluster again on the same spot. 2. As they returned to the parent hive, and you found the queen on the ground, it is evident that there was something wrong with her and she was not able to accompany the swarm. 3. Bees do not usually "ball" a queen when swarming, but if two swarms join one of the queens may be attacked. 4. You did right in cutting out all queen-cells but one, but you would have done better had you given a fertile queen, as in that case brood-rearing would not have been stopped for so long a time. 5. From what you say it appears that the queen must have been a defective one, and was not able to cluster with the bees when they swarmed.

[4030.] *Transferring Bees.*—In your issue of May 5, page 181, you kindly advised me what to do with some bees I had taken over in very old hives. Unfortu-

nately for the bees, I had a big rush of work at the time, and was unable to complete all my new hives for several weeks. I, however, managed to get the occupants of the worst hive transferred, and the others have had to put up with their old quarters for the summer. May I now ask you kindly to help me again by replying to the following:—1. How soon should I transfer the bees so that they may get established before winter? 2. Some of the old hives show traces of wax-moth. I wish to use entirely new frames and comb-foundation. Can I temporarily transfer the old combs which contain brood without taking the moth into the new hives? 3. Ought I to begin feeding as soon as the transfer is made? I may say that, notwithstanding the unfavourable conditions of housing and weather, the bees are doing fairly well, the stocks are strong, and I have taken off a number of very good sections.—BEGINNER, Hants.

REPLY.—1. As soon as you possibly can, but not later than the middle of August. 2. Go carefully over the combs and remove any wax-moth larvæ you may see. This is all you can do. 3. Yes, this will ensure success. Use a stimulative feeder.

[4031.] *Painting the Insides of Hives.*—I shall be extremely obliged if you will kindly answer the following queries through the B.B.J.:—1. I recently bought two new hives, and having more paint than was needed to paint them outside, I painted them inside as well. I now find that the heat of the bees causes moisture to be deposited on the inside of the hive, sometimes in such quantities as to make the quilt and other wrappings quite wet. I know, of course, it is not necessary to paint the insides of hives, but I should like to know whether you consider it detrimental to the welfare of the bees. 2. A week or two ago I had occasion to perform the operation of nucleus swarming, viz., augmenting the number of bees in the nucleus stock by moving same to the site of a strong stock, when the bees were flying freely. Acting upon instructions given in the "Guide Book," I caged the queen of the nucleus stock in the orthodox way. When I opened the hive about twenty-four hours afterwards I found the caged queen absolutely dead. How do you account for this? No bees could possibly touch her, and she was caged without being injured in the slightest. Thanking you in anticipation of your kind replies to the above.—STANBRIDGE, Glos.

REPLY.—1. If hives are painted inside, there is always the danger of condensation of moisture. If you tilt the hive slightly to the front the moisture will drain out, but you had better burn off the paint inside with a painter's spirit lamp. 2. We cannot explain the cause of death of queen, unless you did not cage her on unsealed food, or neglected to provide attendant bees to feed her.

[4032.] *Wintering on Australian Honey.*—I think I have read in your journal that Australian honey with eucalyptus flavour can be bought at about 4d. or 5d. per pound in bulk. If I could get it at a cheap rate I should like to try feeding-up some of my weaker stocks in the autumn with it as an experiment. I have noticed that invariably the stocks wintered on natural stores come out strongest in the spring. I shall be grateful if you will tell me what you think of the project and when is the best time to get this honey, where it is to be procured, and at what price.—E. C., Gloucester.

REPLY.—You are quite right in thinking that bees winter best on their own stores, but the plan you suggest is rather risky, as you have no means of ascertaining where the honey has come from and if it is perfectly free from infection. It is a very easy matter to contract disease by feeding on bought honey, and we would not recommend you to adopt the plan.

[4033.] *Re-queening.*—Will you please, with your usual kindness, help me with some advice as to the most economical way to re-queen twenty or twenty-five colonies—half of my apiary—each year? I started with one skep five years ago, and have been working chiefly for increase since, and have now close on fifty stocks of bees. I get on fairly well with queen-rearing, but have no definite system of re-queening, and should like to know: 1. What is the best time of year to re-queen? 2. How many hives ought I to devote to (*a*) queens and (*b*) drones? 3. Would it be best—I am a carpenter and make my own hives—to provide twenty or twenty-five nucleus-hives, to be used solely for the fertilisation of queens? 4. How many stocks ought to be available for working for surplus—presuming they are in good condition—after allowing for queen and drone rearing, forming nuclei, &c.?—R. C. M., Lincoln.

REPLY.—1. The best time to re-queen is immediately after the honey-flow. 2. If carried out properly, you could secure all your queens from one stock, which should be carefully selected for working qualities. Also one colony is quite sufficient for drones, again selecting carefully for working qualities, and especially for good disposition. 3. With ten nucleus-hives, or even less, you should be able to re-queen the number of colonies you name each year. It will be necessary to devote three hives to the making of nuclei, but if the

colonies are carefully nursed in the spring this number could be reduced by taking your nuclei from the very strongest stocks. If you follow out the instructions given in "Guide Book" for queen-rearing you will have no difficulty.

Bee-Shows to Come.

August 1 (Bank Holiday), at Bromley.—Show of Honey in connection with the Bromley Flower Show. Four open classes. Two Special Hives offered. Schedules from Alex Gunner, Hon. Sec., 91, Park End, Bromley, Kent. **Entries close July 30.**

August 1 (Bank Holiday), at Cambridge.—Honey Show, in connection with the Cambridge Mammoth Show Society. All Open Classes. Eight special prizes, including five Special Hives to be competed for. This show also includes Dogs, Poultry, Pigeons, Cats, Rabbits, Cage Birds, Flowers, Fruit, and Vegetables. Also grand programme of Sports. The splendid Band of the Royal Artillery will be in attendance, and a display of Fireworks will take place. **Entries closed.**

August 1 (Bank Holiday), at Melton Park, Melton Constable.—Annual Show of the North Norfolk B.K.A. Four Open Classes, including one for Single 1-lb. Section and one for Single 1-lb. Jar of Honey. **Entries closed.**

August 1 (Bank Holiday), at Windsor.—Show of Honey and Bee-appliances, under the direction of the Windsor and District B.K.A., in conjunction with the Old Windsor Horticultural Society's show. Schedules from Mrs. W. S. Darby, Hon. Sec., 1, Consort Villas, Clewer, Berks.

August 3, at Stoke Park.—Surrey B.K.A. Annual Exhibition of Bees, Hives, Wax, Appliances, &c., will be held in connection with the Guildford and West Surrey Agricultural Association. Twenty-four Classes (nine open to all). Many medals. **Entries closed.**

August 3 and 4, at Abingdon Park, Northampton.—Honey Show of the Northants B.K.A. Special prizes for open classes, including one for single 1-lb. jar honey. (Entry free.) Judge, Mr. W. Herrod. **Entries closed.**

August 4, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Open class for Honey Trophy. Schedules and entry forms on application to Mr. G. Richings, 2, Shrubbery Terrace, Worcester.

August 10, at Llanerchymedd, Anglesey.—The County of Anglesey Beekeepers' Association offer the following prizes at their Annual Show. For the best six 1-lb. jars of 1910 Honey, 10s. 6d.; open to all. Entrance fee, non-members 1s. 6d., members 1s. For the best and most attractive display of Honey and Honey Products, £1 1s.; open to North Wales; entrance fee, non-members 2s., members 1s. 6d. N.B.—Only half the prize will be given unless there are three or more exhibitors. Schedules from Rev. O. Kyffin Williams, Coldana Vicarage, Llanerchymedd. **Entries close July 29.**

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 10, at Wye, Kent.—Kent Honey Show. Four open classes, fifteen open to Kent. Trophy, cup value 3 guineas, two Challenge cups value 6 guineas each, one Challenge cup value 5 guineas, numerous other Special and money prizes. Special classes for Cottagers, also class for Members of Ashford and District Bee-keepers' Association. Schedules from H. C. Chapelow, Hon. Sec., Wye, Kent. **Entries close August 1.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. In applying, state Honey Schedule required.—Thomas Armitstead and Son, Secretaries, Lancaster. **Entry closes August 3.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

H. F. (Salisbury).—*Sour Brood.*—1. The comb sent contains foul brood. 2. The characteristics of sour brood are sufficiently distinct to make it recognisable as different from foul brood, although it is often mistaken for it. Probably it is because it is so frequently associated with foul brood. 3. Although infectious to a limited extent, it is not so bad as foul brood, as the organism which produces it does not form spores, and the microbe is killed by the acid product of decomposition before it dries up. 4. The only way to prevent it is to have strong and vigorous colonies in healthy dwellings, supplied with good food and proper ventilation.

O. D. B. (Boughton).—*Varieties of Heather.*—The specimen that you send is *Erica cinerea*, or bell-heather. The honey from this source is thin, and of an inferior quality to that gathered from ling (*Erica vulgaris*).

Cottager (Tonbridge).—*Time for Requeening.*—1. Unless the bees have done it themselves in the meantime, re-queen

as soon as the honey flow is over. 2. The skep can be used for driven bees at the end of August, or you might put the driven bees on to frames fitted with foundation, squeeze all the honey from combs in the skep, and, after boiling it, use it to feed them, and so enable them to draw out combs. The unsealed stores should not be given without boiling, or harm to the bees may result. If kept too long unsealed honey will ferment, and if used as bee-food is likely to cause dysentery.

F. W. V. (Gloucester).—*Best Time to Drive Bees.*—1. To secure all the bees, it is best to drive as late in the evening as possible. To get the bees into the hive use a bicycle lantern, placing it so that the light is focused right on to the entrance of the hive, gently stirring the bees with a stick if they form in clusters. We have hived scores of lots of bees in this way. 2. The young queen is usually victorious in combat with an old one, and no doubt this happened in your case. The old queen comes out with a first swarm; casts contain a young queen or queens. In driving select the queen from those skeps that have swarmed, and you will get the youngest.

M. W. (Essex).—*Using Formalin for Disinfecting Diseased Combs.*—Formalin is sold by most chemists in liquid form. The best method is to use it in the tin trays or other appliances sold for the purpose, as it is not advisable to spray the combs when bees are in full summer work.

E. P. (Radlett).—*Suspected Disease.*—The usual symptoms of "Isle of Wight disease" are absent, and the bees probably need feeding with warm medicated syrup.

J. J. (Ross-on-Wye).—*Suspected Queenlessness.*—1. If the bees are not able to gather sufficient stores (about 25 lb. to 30 lb.), you should feed them until they have this quantity. Supply the food by means of the hole in top of skep. Next spring transfer them to a frame-hive. 2. Examine the stock from which the swarm issued, as their unsettled state may be caused by queenlessness. The queen would no doubt hatch out, but there is always the danger of her being lost when on her mating flight. 3. There is yet plenty of time for the queen to commence laying. If drones are allowed to remain in the hive after about the second week in August, examine very carefully, and if you do not find a queen, introduce a fertile one. In a late season such as this bees will often allow drones to live until the end of August, although there is a fertile queen in the hive. Therefore, their presence at a late period is not always an indication of queenlessness.

A. M. (Markendale).—*Queen Cast Out of Hive.*—The queen is old, and the bees have evidently superseded her with a young one.

S. H. (Edinburgh).—*Immature Drones.*—The bees, having given up all idea of swarming, are casting out the immature drones, which they remove from the cells. This is quite a usual occurrence, and there is no indication of disease, the white appearance being caused by their not being fully developed. The bees are reserving the food supply by not continuing the rearing of useless drones.

Disinfectant (Birmingham).—*Syringing Combs with Carbolic Solution.*—If the combs have been exposed to the air, it will be safe to use them again. If the bees accept them, it is a safe sign that they are all right.

F. J. M. (Hants).—*Number of Frames in Brood-box—Best Race of Bee.*—1. The secretary of the Hants B.K.A. (Mr. E. H. Bellairs, Bransgore, Christchurch, Hants) will be able to inform you of the best heather district near Alresford. 2. Experience and experiment have taught us that the standard frame for the brood-nest gives the best all-round results in the British Isles, taking them as a whole. 3. If selection in breeding is carried out, there is no bee that can beat the native race as honey-gatherers.

Suspected Combs.

J. J. (Newport).—1. Comb is affected with sour brood. Re-queen the stock, and feed with medicated syrup. 2. Carbolic cloth from an infected hive should not be used on a healthy stock, but most probably no damage has been done.

L. G. Watts (Sussex).—The bees have died of starvation. There is no disease in the comb.

T. C. M. (Woking).—1. The bees are suffering from "Isle of Wight disease," and if they continue to get worse destruction of the stock is advisable. 2. No cure is known at present for this disease. 3. No doubt the attention and good food resulted in your stocks coming through the winter in good condition.

Crescent (Woking).—The bees are evidently suffering from "Isle of Wight disease," and your best plan will be to destroy the colony.

Trefnant (Wales).—Your samples of comb are affected with sour brood. We regret to hear of your ill-luck with the bees.

Honey Samples.

G. F. (Hants).—Very nice honey from clover and lime. Colour, flavour, and aroma good, though it is a trifle thin. Quite suitable for the light-honey class.

E. G. (Hereford).—Sample A from skep

is of fairly good flavour, though dark in colour. Sample B is completely spoiled by the odour of the previous contents of bottle. Colour is very good.

C. F. P. (Bridgford).—A good honey for the show-bench. Nice light colour and flavour. Gathered mainly from white clover. Its only defect is that it is rather thin in consistency.

H. W. C. (Llandudno).—1. Honey is of medium colour, density fair. Unfortunately, the odour of the previous contents of the bottle so predominates as to destroy any distinctive flavour and aroma. 2. The flower is ragwort (*Senecio Jacobæa*), the honey from which is very rank.

Fownhope.—Samples 1 and 2 are both beautiful clover honey of very good quality, though No. 1 is better in density. No. 3 is of poor flavour, very thin in consistency, but of nice colour.

A. B. (Tisbury).—Honey is good in colour, rather thin, and evidently contains a good deal of charlock.

X. Y. Z. (Malvern).—A good sample of raspberry honey, and worth the price asked for it.

E. L. (Herts).—Honey is from white clover and charlock. It is very thin, and, therefore, would not stand much chance on the show-bench. About 45s. per cwt.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

SEVERAL HIVES OF BEES FOR SALE, in "W.B.C." £1 10s.; others, £1; as new.—THOS. DE VERE, Harbledown, Canterbury. c 2

WANTED, good business man, to take mushrooms and brambles in season.—Apply, Z., B.B.J. Office. b 99

STRONG HEALTHY HIVE, 8s.; 10-frame Observatory, almost new, painted, 18s.; new ditto, risers, &c., calico roof, painted, 25s. — L. HACK, Holmwood, Surrey. b 97

ROYAL SOVEREIGN STRAWBERRY RUNNERS, 2s. 6d. per 100, paid.—MARSH, Baytree Cottage, Polegate. c 11

"GERSTER" WAX EXTRACTOR WANTED, good condition.—WYATT, Bishopswood, Chard, Somerset. c 10

SEVERAL NEW "W.B.C." HIVES, painted, 12s. 6d. each.—WILLETT, JUN., Bee-keeper, Malden, Surrey. c 3

Special Prepaid Advertisements.—*Continued.*

STRONG HEALTHY NUCLEI, this year's tested Queens, 1, 5 frames, 10s.; 2, with 3 frames, 6s. each.—Address, HOLM LEA APIARY, Wenden, near Saffron Walden, Essex. b 95

EXCHANGE OR SELL, poultry, Buff Orpingtons and Black Wyandottes, for Chicken Brooder or healthy Driven Bees.—EDGELL, manager, Farrington, Bristol. b 94

SALE OR EXCHANGE, 18 healthy Stocks of Bees, 8 headed by pure imported Italian Queens, 10 by English Queens, large Hives, full stores, not supered; Honey Extractor, several crates of Shallow Frames. — Offers to WATTS, Chickerell Farm, Weymouth. b 90

2 STRONG STOCKS OF BEES, in new Hives; young Queens, plenty brood and stores, perfectly healthy; £3 the two, or sell separately; would deliver personally to beginner reasonable distance. Photo sent.—BARKER, Bow Hill, Barwick, near Leeds. b 93

FOR SALE, Lincoln Elk Motor Cycle, 3½ h.p., in good condition; also 3 h.p. Lloyd Motor Cycle, with new tyres, carrier, horn, tools, &c.—Apply, H. DRAYTON, New Bolingbroke, Boston. b 88

BEES FOR SALE. — Four Stocks, in Dundee Heather Hives, 1910 Queens, with full equipment and all necessary appliances. Lot for £7; single Stocks, 40s.; splendid chance for beginners. —GREIG, Bearsden, near Glasgow. c 6

HONEY, 1909, GRANULATED, 42 lb. screw-cap bottles, 8s. 6d. doz.; adjudged by Editor very good heather and good heather mixture.—FINCH, Coverack, Cornwall. c 7

SURPLUS COLONIES FOR SALE, very strong. Cash or deposit.—BUGDEN, Staplehurst, Kent. c 12

NEW LIGHT SCOTCH CLOVER HONEY, £3 cwt.; sample, 3d.—T. RULE, Summervale, Annan, Dumfriesshire. c 80

CARNIOLAN NUCLEI, Hive, 4 Standard Frames, 15s.—BEECROFT, Abbott's-road, King's Heath. c 72

WANTED, 2,000 best filled Sections, also fine Extracted.—DELL'S, Leigh, Lancs. c 70

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture postcards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

BUSINESS ANNOUNCEMENTS.

HEALTHY 1910 Native Queens, from swarming cells, 2s. 6d. each.—WOOLDRIDGE, Alderton, Tewkesbury. c 1

WANTED, Driven Bees. Queens for sale, 2s. —KEATLEY, Blackberry-lane, Four Oaks, Birmingham. b 89

STRONG HEALTHY STOCKS, in 10-frame "W.B.C." Hives, for sale, 25s. each.—NELMES, Cathcart. b 98

DRIVEN BEES.—Booked delivery mid-August, 1s. 3d. lb.; strong Stock, on 10 frames, good Hive, fine for heather, 25s., on rail.—HILLS, Alton, Hants. c 4

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Wax Returns from Combs.—In the *Luxemburger Bienenzeitung* it is stated that, when melted, combs which have not been used for rearing brood yield 80 per cent. of pure wax; cappings give 85 per cent., whereas black combs in which a good many generations of bees have been bred produce only 48 per cent. A trial made of the residue from a solar wax-extractor which appeared to contain an insignificant amount of wax, when submitted to pressure, was actually found to contain from 25 to 50 per cent. of pure wax. The thin cocoons left in the cells by the nymphs form a scum on the surface of the wax. Those who use a solar wax-extractor should take note of above experiments.

Prime and After Swarms.—It is stated in *Practischer Wegweiser* that it is unintelligible to the novice, but well understood by the expert bee-keeper, why it is difficult to unite a first swarm with a cast. It is due to the fact that the cast with an unfertilised queen has a peculiar broody odour, which is unknown and probably obnoxious to the old queen. The members of two different groups, when, during the excitement of swarming, they unite to form a cluster, cannot settle down comfortably. If they are put into a hive or skep, they are almost certain to leave it, unless sprinkled with scented syrup, which would impart to all the same odour. It is therefore better to unite a first swarm with another first swarm, and a cast with a cast.

Disease in Bees.—M. W. Bedell, writing in *L'Apiculture Nouvelle*, mentions the mortality amongst his bees, and describes the symptoms, which are very similar to those noticed during the epidemic in the Isle of Wight. He says all the apiaries round him have suffered, and the colonies which have survived are very weak. He managed to winter two colonies, but they turned out very weak, and he had to strengthen them before they were any good. He visited all those who kept bees in the district, and found the colonies attacked in the same way, for a distance of eight kilometres. In the first apiary of twenty-one colonies which he visited all were dead but one, and this one was in a bad condition. Another apiary of seventeen colonies had all but four dead, and in three other apiaries of about thirty colonies, where the losses were not quite so great, he found the colonies so weak that they had to be removed to another infected district.

Radium in Honey.—M. Alin Caillas, who has been analysing honey, states in *L'Apiculteur* that certain honeys are radio-active. He has not found that all honey contains radium, which is comprehensible, because all soils do not have it. A large number of samples analysed, however, contained radium, and he found traces of it in honey from the Department of Tarn and in that received from Austria and Russia. Radium is a body whose principal property is luminosity, and the power of radiating an emanation which can make an impression on a photographic plate. It is an energy embodied in a very small volume, whose destructive action is very great, and it can cause serious injury to the organism. But, when very much diluted, the effects may be beneficial, and it can therefore be advantageously used therapeutically. It is used in medicaments for lupus and cancer, and as the results have been satisfactory the writer thinks that, instead of using a manufactured article, it would be better to resort to natural remedies. It is, therefore, probable that honey is an ideal medicament. It is not only in the case of lupus and cancer that radium is beneficial, but the weak, the neurasthenic, and convalescent derive benefit from it. As honey contains radium, if this is indicated it is evident that to recommend the one is to recommend the other, for they are so united as to be inseparable. This is, therefore, another of the many reasons why honey should be freely consumed.

DERBYSHIRE B.K.A.

ANNUAL SHOW.

The twenty-seventh annual show of hives, bees, honey, wax, and appliances, under the auspices of the Derbyshire Bee-keepers' Association, was held in connection with the Derbyshire Agricultural Society's show on July 13 and 14 at Osmaston Park, Derby.

In spite of the unfavourable honey season in Derbyshire, some splendid exhibits were staged, and the bee and honey section attracted a considerable number of visitors. Mr. Geo. Hayes, the secretary of the Notts Bee-keepers' Association, was the judge, and he also conducted two examinations for third-class certificates of the British Bee-keepers' Association. The awards are as follow:

MEMBERS' CLASSES.

Observatory-hive with Bees and Queen.—1st, S. Durose, Burton; 2nd, J. Pearman, Derby; 3rd, J. Bakewell, Burton.

Trophy of Honey in any Form.—1st, J. Pearman; 2nd, S. Durose.

Six 1-lb. Sections.—1st, J. Pearman; 2nd, S. Durose.

Twelve 1-lb. Jars (Light) Extracted Honey.—1st, J. Pearman; 2nd, S. Du-

rose; 3rd, E. Varty, Diseworth; v.h.c., A. Ancote, Coton-in-the-Elms.

Twelve 1-lb. Jars (Dark) Extracted Honey.—1st, J. Pearman; 2nd, J. T. Willson, Shirebrook; 3rd, S. Durose; v.h.c., R. Giles, Etwall.

Six 1-lb. Jars Extracted Honey.—1st, E. Varty; 2nd, H. Smith, Marston-on-Dove; 3rd, A. Ancote.

Beeswax.—1st, J. Pearman; 2nd, E. Varty; 3rd, F. Howard, Sudbury.

Six 1-lb. Jars Granulated Honey.—1st, F. Howard; 2nd, J. Pearman.

OPEN CLASSES.

Twelve 1-lb. Sections.—1st, C. W. Dyer, Compton, Newbury; 2nd, R. H. Baynes, Cambridge; 3rd, G. Nicholson, Langwathby.

Twelve 1-lb. Jars Extracted Honey.—1st, R. W. Lloyd, Thetford; 2nd, H. W. Saunders, Thetford; 3rd, A. Jackson, Elvedon; 4th, R. H. Baynes.

Collection of Bee-applianees. — 1st, "Seeds and Bees, Ltd.," Liverpool.

A silver challenge cup to the exhibitor who gained the highest number of points was won by Mr. J. Pearman.—R. H. COLTMAN, Hon. Sec.

AMONG THE BEES.

BROOD-COMBS.

By D. M. Macdonald, Banff.

As brood-combs are a great part of our stock-in-trade, it behoves us to see that they are of the best. Defective combs, from whatever cause, are a hindrance to the bees, and periodically about the time of the spring-cleaning all showing serious faults should be weeded out and the worst at once run down into wax. Should, however, the faults be trifling, the bees may be made to repair them and make the old combs almost as good as new. About the time of fruit-bloom bees are eager for some comb-building after their day's foraging is over, and this night work may well take the shape of repairing defects. Combs with hard, dry pollen in a good many cells may have these parts cut down close to the mid-rib, and the bees will at this season build out the foundation in such a way that no patching will be detected even by the observant eye. A comb containing too many drone-cells can have the part cut out and a piece of worker-foundation fitted into the vacancy, when the bees will renew the blank with cells better fitted to secure the well-being of the stock. A handier plan is the following: Take a circular tin lid or some similar appliance, cut out the defective part, and from a reserve comb secure a similar round piece to fit into the part rejected. Place the frames so fitted in a strong hive at night, and in the morning if you examine them you would scarcely see where the joining has taken place, so neat have the workers been in accomplishing their art patchwork. The same can be done with parts of combs showing mildew, or those which have deteriorated from accidental dents, breaks, or cracks. This also holds true of combs all worker-cells of which are otherwise fresh and sweet. Really old combs, those with a doubtful history, and any patently defective are not worth fussing over.

While it is, perhaps, true that bees winter best in combs which have been bred in, not necessarily *old* combs, still they like new combs best when the active season opens, and with even a slight flow on they will very rapidly draw out any frames fitted with foundation which may be inserted in the brood-nest. It is really marvellous how energetically a healthy stock will labour night and day until every cell is fully drawn out and occupied. Then with what avidity the queen seizes on this fine new fabric to prosecute her calling. The chances are that in a day or two almost every available cell will be occupied with fresh-laid eggs, as if the choice cradles thus provided had given her a new lease of energetic ovipositing. If another and then another of these frames of foundation are supplied at an interval of three or four days to a week, the whole will present one solid slab of brood. I know of few fairer sights in the whole interior economy of the hive than is presented by these handsome combs.

Full sheets of foundation fitted into frames and occupying the whole space secure for us slabs of all worker-cells, and if they are built between two other evenly-constructed combs occupied at the time with brood, the chances are all in favour of their being perfectly interchangeable. Later in the season this certainty will not be so great, as then the upper inch or two of the older combs may be drawn out too far when occupied with sealed honey. As it is desirable to ensure that every frame shall be all worker-cells and perfectly interchangeable, these can, as a rule, be secured in rather weak hives. Reduce the area to, say, five frames, and place the frame with starter in the centre. Remove this comb when drawn out and supply another. Should there be any cessation of the honey-flow the colony should be fed for the time until a flow sets in. For the same purpose use a fairly strong nucleus. Give the bees a comb of brood, a comb with some honey in it, and between the two place a frame with starter. The queen proceeds to fill the empty cells, and the bees, having no desire for swarming, work energetically to build out the new comb. While on this subject I may say that second swarms or casts also build almost all worker-combs from starters, and, as a rule, they construct

them of the "flat-as-a-board" order. In my early days I had some skeps, and the casts from these invariably gave me the finest combs I have ever possessed, and they were all drawn out from starters. These bees rarely, if ever, build any drone-comb the first season.

Having obtained these "perfect" combs, great care should be taken to preserve them. I know of no better place to keep any extra combs than under the care of the bees, and I would deprecate the withdrawal of combs from the hive during the winter. Any withdrawn are best kept in a fairly warm, dry room if the honey is not to granulate, and they should be carefully preserved from mice or moths, both of which prove very destructive if they have free access to the receptacle. Extracted combs well dried should be placed in closed-in hives in the honey-house, or some garret near the slates, piling one above another, with a sheet or two of paper between each hive.

If, unfortunately, the wax-moth finds a lodgment the combs should be fumigated. Pile them up above a box into which burning sulphur has been inserted, and this will kill the moths and larvæ; but a second sulphuring should be given them after some time to destroy all which have been evolved from the eggs since the first fumigation. As formerly advised, a more powerful destructive force may be used in the shape of bisulphide of carbon. Here the fumes work *down*; therefore place the dish with the lighted substance above your pile of combs; but great care must be taken in handling this powerful explosive.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

FOUL-BROOD LEGISLATION.

[7874.] The weather for the past fortnight since my last notes were written has not been a great improvement on the previous three weeks, so that in South Berks our chance of even a moderate "take" of honey becomes very remote. During last week I reduced the number of racks on nearly every hive to one, securing those sections which are saleable and returning those not filled and sealed to the single rack left on. After well wrapping up with warm material, I left them, hoping to get some of the sections finished, if we should get a spell of summer weather.

I am curious to know what my brethren in the craft of bee-keeping think of the proposed Bee-Diseases Bill as set forth on page 273 of B.B.J. Those who are ratepayers may notice that Clause 3 will add to their burdens—now almost intolerable. Clause 4, section 1, will require much more learned experts than we have at present if they can, by examining the product—i.e., honey and wax—decide offhand that these products contain the germs of foul brood.

Clause 5 says a local authority *shall* (not *may*) at their discretion make by-laws, but when these by-laws are confirmed the "authority" may impose fines for their contravention up to £5. Clause 6 says the owner of diseased bees or hives shall give notice to the local authority, and for failing to do so he shall be fined £2 and be put on the black list, as it states for a second offence the penalty shall be £5. But these fines are small matters compared with the effect that Clause 7 will have on all bee-keepers who have produced any honey and have neglected to clear it all out before the man with authority arrives on the scene. It does not require any contention of mine to assert that honey taken from hives whose inmates are diseased must contain the germs of the disease, if there is any truth in the germ theory. Take, for instance, a bee-keeper with a score or more of hives, and, say, two of the score—or 10 per cent.—are diseased, perhaps incipient cases; if this Bill becomes law the bee-keeper will not dare to sell any product of his apiary. This is a pretty state of affairs to propose to bee-keepers who have perhaps half a ton of honey to dispose of. Is it to place us producers of honey in such a dilemma that the ratepayers' money is to be voted to employ experts to go about the counties inducing people to take up bee-keeping, and these same experts are to have the power of prosecuting next year perhaps the same men and women for having a colony of diseased bees on their premises? If the experience of those countries that already have Foul Brood Acts gave even a moderate ground of hope that the diseases of bees were going to be stamped out it would modify somewhat the drastic remedy now proposed. Take the Province of Ontario, where an Act has been in force some ten years, and see the result. At first one inspector was appointed, Mr. McEvoy, and his reports led one to believe that the disease was being cleared out by leaps and bounds; but, according to the Transatlantic bee-journals, the number of inspectors was increased last year to ten for the Province of Ontario. Shall we in the years to come fare any

better than the "Canucks"? I think not. If Mr. Avery can reduce the disease to the small dimensions of 5 per cent. by county B.K.A. work, why worry for an Act?

I have written strongly against legislation because I honestly believe that it will be detrimental to bee-keeping generally, and reduce rather than increase the number of bee-keepers, with the consequence that the utility of the honey-bee in the economy of Nature will be restricted. Take the countryside and notice the scarcity of hives of bees compared with forty years ago. Ask the old men of the villages, and they will reckon up bee-keepers of the past by the score where now the number is ofttimes only one or two in a village.—W. Woodley, Beedon, Newbury.

[Our worthy correspondent takes a gloomy view of the effects of legislation which we cannot share, for the results he anticipates are diametrically opposed to established facts in places where such legislation has been adopted. His criticism of Clause 7 is hardly just, because it does not prevent any bee-keeper from selling his produce from healthy colonies, but only from those infected, and if 10 per cent. are diseased it is quite right that the product of such diseased colonies should not be scattered over the country to contaminate others. The experience of other countries has shown that foul brood can be greatly reduced, and places where it was impossible to keep bees at all owing to the prevalence of the disease are now practically free from it. Moreover, where legislation has been adopted bee-keepers are not anxious to have the Acts repealed. Writing from Canada, in *Gleanings*, Mr. Holtermann says: "How is it that the foul-brood question has stirred up so much bitterness in so many lands? In some cases the odour of the correspondence has been almost as unsavoury as that of the disease itself. The British Bee Journal has for some time had pages of such correspondence. One side is in favour of foul-brood legislation, while the other is opposed to legislation for the suppression of the disease. A bee-keeper in Canada opposed to foul-brood legislation would be a curiosity. I know of none." Does not our correspondent know that the results obtained by Mr. McEvoy in Ontario were so satisfactory that bee-keepers asked for more inspectors to be appointed? The Province of Ontario is more than double the size of England, and surely it cannot be said that ten inspectors for so large an area are too many. The only wonder is that so few have been able to do so much. The favourable results are no doubt owing to the hearty co-operation of the bee-keepers themselves, who are alive to the advantages of such legislation. In the same proportion it would mean only five inspectors for the whole of England, and they would not have much time to spare to interfere needlessly with anyone's bees. If our correspondent would follow the matter up he would find, as we have done, that it is owing to the extermination of bees by foul brood that there are not so many kept now.—Ed.]

IS IT "ISLE OF WIGHT DISEASE"?

[7875.] Mr. Yetts's letter on "Isle of Wight bee-disease" (page 295) in the last number of the B.B.J. induces me to ask if he would oblige by describing the symptoms of his diseased bees. Was he convinced that the complaint was "Isle of Wight disease"?

My difficulty is to find what really constitutes this disease. The fullest account of it that I am aware of is that given by Dr. W. Malden in the *Journal of the Board of Agriculture*. The report there summarised states that the author was unable to determine by observation of the hives or by dissection whether an individual was suffering from the disease or not. He stated that it was only to be made out by the "general condition" of the stock. The bacteriological investigation was attended with such difficulties as to make it appear at present incomplete, for the identification of the causal bacilli cannot be said to be absolute. Judging by similar human diseases, it would seem impossible absolutely to diagnose a specific disease by "general conditions" alone, for they are common to more than a single disease. Therefore, can we at present confidently assert that any specified case must be "Isle of Wight disease"? So far as I understand this term, it implies infectiousness, and no disease unattended by that condition can be true "Isle of Wight disease." Hoping that the question may be of interest to bee-keepers as it is to me, and that your correspondents who may have the opportunities of observing will record all facts about it that they can and send them to the Journal.—C. B. Hunter (Lieut.-Col., late Indian Medical Service).

BEES IN CAMBERWELL.

[7876.] I kept through the winter a very weak lot of bees scarcely covering half a frame. On April 27 I looked at them, and found no young brood, though there was a patch of sealed brood covering about a sixth part of a frame. I put them then (perhaps foolishly) on seven frames of foundation, including the one they already inhabited and two others they had a little drawn out. On June 9 frame No. 1 was still undrawn, No. 2 almost without honey, Nos. 3 and 4 had brood, No. 5 was a little drawn, and Nos. 6 and 7 were blank foundation. I

had ceased feeding, and I then put on a 7-lb. super just for sport. My bees had paralysis rather badly, and had barely recovered by the time the lime blossomed on June 25. On a busy day I was then able to count up to fifty, and sometimes sixty, bees entering the hive per minute. The weather was unfavourable during the lime harvest, and has not been good since, so I was wondering whether my bees were on the brink of starvation or over it. To-day (July 27) I have had a look at them, and find that the two back frames are crammed with honey from top to bottom. I can see no more without disturbing the super, which has not been touched, although the bees are now in it in some numbers. They still seem like a very feeble lot, and I was perfectly astounded to find that they had gathered during this bad weather something like 18 lb. of honey, allowing some 6 lb. or so for the five frames of which I have seen nothing. If this can be done with a handful of bees at the end of May, what could not be done with a full hive at the opening of the lime blossom?—G. G. DESMOND, July 27.

COMMENTS ON CURRENT TOPICS.

[7877.] *The Taper Frame.*—This is *not* a "fad," but a perfectly legitimate and withal workmanlike means of ensuring ease of manipulation in handling frames. Few, I think, would venture to call the late Mr. C. N. Abbott a "faddist"; most, on the contrary, will agree that he was one of the most capable and practical bee-keepers who ever lifted frame from hive, yet he used a good-sized taper frame largely, and he was not the man to use, and continue to use, a frame which he did not believe in.

Any bee-keeper knows that it is possible to lift a rectangular frame from a hive without hurting a bee. He also knows that the said frame must be lifted slowly and carefully to ensure this, and for those owning only a few hives, and willing to take all the time they require in the various manipulations, nothing more is needed. But what I say is that the taper frame facilitates manipulation, and manipulative facility is one of the things which *must* be studied and sought after by the large bee-keeper. Further, the idea of "humane handling" was quite a minor point with me. My chief thought was for the bee-*keeper*, not the bees. The bee-keeper is not "humane" to himself (and possibly his neighbours) if he is continually crushing bees. Personally, I very seldom, if ever, crush a bee between the frame-ends and the wall of hive; at the same time, I know that a taper frame is both more easily and quickly handled than a "square" one; consequently that its *one* advantage is neither "hypothetical," as stated by our worthy Editor, nor a "fad," as "D. M. M." (page 284) is pleased to dub it.

Propolising.—Is it not an astounding fact that manufacturers of hives have for the past forty years continued to make dummies close fitting, so that they are often as firmly fixed as though a cabinet-maker had glued them in? Space-making dummies should always hang clear, and should be wide enough to give plenty of room for frame-handling (here are two more points tending to ease and speed of manipulation). When it is desirable to divide the frames in a hive, a special thin, close-fitting division-board should be used. When the very great desirability of an efficient space-maker in a hive is considered, it will seem almost incredible that a certain well-known hive—as originally designed—had no room for a dummy at all unless one of the frames was first removed. This was "compactness" carried to excess.

Keeping Bees Cool.—Mr. Bullamore asks (page 285), with reference to quarantined bees: "Was it correct to keep the bees cool for the three days they were confined?" Perfectly correct, and I can only say that I am astonished that any practical bee-man should ask the question. Does Mr. Bullamore imagine that I put the bees in a refrigerator? They were simply placed in a nearly dark outhouse, that was all.

"Gliding Motions" "In" and "Out" of the Apiary.—This seems quite a favourite term with one of your correspondents. Thus, in folding sections we use a "gliding motion," and the same is to be used when working with the bees; but for a really typical case of gliding—the very poetry of motion—commend me to that of the man who is quietly planting out (let us say) lettuces a rod or two away from the apiary, when all on a sudden some vicious miscreant of a bee comes prospecting round his head. He (the man) flings out a "right and left," but misses, of course; and the next thing you see is a pair of legs running, a pair of lips blowing, and a pair of arms whirling like windmill sails, the bee all the while buzzing furiously in his hair, seeking to plant, not lettuces, but a sting!

I note that Mr. J. M. Ellis says I am "ultra-pessimistic" with regard to the season; but my remarks thereon have at least this one inestimable quality, they are true, at any rate in this locality.—SAML. P. SOAL, The Old Rectory, near Rochford, Essex.

[We would again point out that Mr. Abbott was one of the committee who unanimously recommended the present standard frame, and there was no one who strove more earnestly to get it

adopted, and although he had been favouring a tapering frame, he loyally gave it up for the standard, which he thereafter advocated and used.—ED.]

SOME EXPERIENCES OF BEE-STINGS AND RHEUMATISM.

"A Comic Cure"—that is what the average person considers bee-stinging for rheumatism! When I spoke of trying the cure as an experiment to several medical friends, I noted a peculiar look in their eyes that clearly meant: "Do his friends know?" Now that I have given up experiments doubtless my medical friends think more hopefully of me. There is abundant evidence (to say nothing of tradition) to prove that persons frequently stung by bees are free from rheumatism. One striking case which I contributed to Dr. Ainley Walker's report in the *British Medical Journal* on the subject is a good illustration.

Mrs. P., near Salisbury, suffered severely from rheumatism for ten years. She then kept bees, and was frequently stung, since when she has been entirely free from rheumatism, i.e., for a period of twelve years. No medicine did her any good before, and her mode of life and place of living have been the same for twenty-two years.

The Reverend M. O., having suffered from rheumatism for years, and having undergone all kinds of treatment in the way of baths at Homburg and Bex, with little or no benefit, began in 1896 to keep bees, and "was often stung." In 1909 he wrote to me that since 1896 he had never had any rheumatism, being free for a period of seven years. It is right to add that this sufferer, while believing in the beneficial effects of the bee-stings, partly attributes his immunity from rheumatism to the "great perspirations from the honey I handled, and looking after the bees in very hot weather." I am inclined to agree with him. Many things may help a cure.

Mr. Cowan, the Editor of the BRITISH BEE JOURNAL, tells me that an American friend of his never suffered from rheumatism so long as he kept bees, but that since giving up bee-keeping he suffers from the complaint. He gets rid of an attack, however, "by going among the hives and getting himself stung." There is no story of "sweating" in this case.

Dr. E. J. Burton, of Birmingham, has had considerable experience of the "cure," both personal and otherwise. He wrote to me that he presumes "the man who first introduced leeching met with a violent death in the primitive days of physic." This was apropos of the curious opposition to the cure by medical men.

Last year I made an experiment upon a man, aged sixty-seven, who had been suffering severely from rheumatism for a year in his left hip and leg. On June 23 I applied five bees, and on the 25th eight bees. On the 26th he reported that he had had a good night, and could turn over on his hip without pain. This was the first time for a year. I applied seven more bees, and the next day (27th) he had "no pain whatever." He continued to improve, and slept well. On July 30 he pronounced the result as "marvellous." Later I stung him at various intervals with more or less satisfactory results. Then each of us went for a holiday at the end of the summer, and on my return I found someone had persuaded him to try electrical treatment at the West London Hospital, which did him no good at all. He is rather worse now. If he wants more bee-stings he must live in the country and start a hive. I shall sting him no more. My impression is that he has adhesions between the nerve and sheath, and that something more drastic than even bee-stings will have to be done by surgery if he wishes for serious improvement. The interesting fact remains that as long as he was under the stinging treatment he was much relieved.

Dr. Terc, of Marburg, keeps up the stinging in some cases for over a thousand stings. In my case I only gave fifty-four stings. The process involves considerable time and trouble if direct application of bees is made. I got my bees from Staffordshire by post in specially-made boxes. It required some practice to catch the bees and apply them. At first I used Dr. Burton's bee-forceps, and then, later, devised an apparatus made with a test tube and glass slide, but, finally, I found the best way of all was with the gloved fingers. Bee-catching is entirely a matter of practice. I used to let the bees out upon the window panes in the room and catch them there. It is safer, but with practice they can be caught as they emerge from the exit door of the box. In dealing with bees the great point is to be silent and move leisurely. Bees object to sudden movements and noise. But bees are not cowards like wasps. The latter will not attack a person who faces them. A wasp only stings a person who shows fear. Face a wasp who goes for you and he will fly away. A wasp is a coward, but an intelligent one.

In conclusion, I may express my opinion that the bee-poison does exercise a curative action over rheumatism, but I doubt if personally applying the bees is worth all the trouble entailed. The length of time necessary for a cure seems to be quite indefinite. The pain of being stung is a distinct objection, though this varies a good deal in different people. Rheu-

matic subjects usually do not suffer from swelling and induration afterwards. I, personally, am an exception. Making various experiments upon myself, I found the result decidedly unpleasant. The itching subsequently was very great. In my old patient, however, there was no reaction, all irritation disappearing by the next day. Formic acid is not the only ingredient of the bee-secretion. There is "an alkaloidal base akin to the venoms," according to the researches of Calmette and others.

If the bee-sting cure appeals to any rheumatic person, I think the best thing for him or her to do is to keep bees, and by being stung occasionally the sufferer will obtain relief, and at the same time have the advantage of the stock of honey made.—FREDERIC VICARS, M.D., in *Guy's Hospital Gazette*.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Calico on Roofs (page 250).—For some time I have used, and advocated, this method of proofing the roof. I have, however, glued my calico into place before painting. More extended experience convinces me that this is not so good as laying it down on paint. I have had both styles in use for years, and the glued calico is all right if a coat of paint be given from time to time, but it will not bear neglect to the same extent as the other. I have some hives which I have neglected to paint when they needed it, and the old paint, perhaps inferior, is perishing, with the result that water can penetrate the calico and loosen it. The trouble is not very serious, except where the calico has been strained overtight in the obtaining of a neat finish, but it would not be so likely to occur with the more orthodox method.

Power Extractors (page 255).—Now, isn't that discouraging? To find that no apiary in this country warrants the use of such a machine. Just as I was considering the purchase of one or two of these.

Bees Entering Supers (page 264).—H. G. Mace may find it next time an advantage to reduce the thickness of his wide-spaced extracting-combs to about 1 in. This will enable the bees to warm up the space more readily than if little more than bee-way exists between the combs, whilst it will obviate the necessity of depositing honey at the bottom of a long cell. Also he will increase his harvest of wax. A thoroughly hot knife, used slowly, will make a beautiful job of the work.

Isle of Wight (page 265).—Is it true that "all efforts to re-introduce bees into the island have failed"? The last we heard was that stocks had come through the winter. What of the spring and the month of May? If he should see this, would Mr. Cooper kindly send us a statement of how things stand? The theory as to the introduction of a new weed is interesting, but if a plant be responsible there must be districts, its natural habitat, where the keeping of bees is equally impossible. Do such places exist, or is it part of the theory that such a plant is periodically virulent? The theory that a plant is responsible is no new one, or merely wild suggestion. Such plants as *Cannabis indica* or Indian hemp, *Oxyacantha spinosa*, and *Centaurea* (the blue cornflower) have been indicted. Thus, W. K. Morrison, in *Gleanings*, 1907, quotes: "*Mal de mai* is a sort of frenzy; and, that being so, it is easy to see how *Cannabis indica* can be a contributing cause, because the people of the East have long used the resin or extract of cannabis as a powerful stimulant, producing frenzy, and quite frequently insanity, by habitual users of it. The East Indians, who use this largely, name the substance *ganjah*. Some good authorities now think that it was this substance which caused the downfall of King Solomon. Hamet attributed this (bee) disease to the charlock or wild mustard." Just whether King Solomon suffered from the Isle of Wight disease is not so clear!

Do Swarms Carry Disease? (page 277).—This is an old bone of contention, and Mr. Soal will no doubt welcome criticism of his conclusions. He argues, adversely to a natural swarm, from the data of a forced swarm. But the two things are by no means the same. In the case in point the queen was evidently decrepit, almost certainly diseased, in which case the whole thing is accountable. In a natural swarm the queen is at least vigorous enough to have produced the swarm, and the trip rations, taken by the bees, are from newly-gathered nectar, which is extremely unlikely to be contaminated. I presume that he fed the bees upon the third day with *medicated* syrup, so that I venture to think that had he re-queened when hiving the trouble would not have recurred.

Bees in the Van-guard (page 278).—It is no doubt well to cull or weed out your rotten hives and your vicious bees, but not by such Uriah-like means as these. But the occurrence is surprising in these days of cheap education. The bees were not properly (en)trained, whilst the porters must have been ignorant to a point of great bravery. Here is a fruitful field for our lecturers and proselytisers. Teach the whole of the servants of the "companies" to deal with bees in emergencies, and you will earn the good-

will of the community. I have no doubt that it has never occurred to the management to keep a tame expert and a bee-smoker at every station!

Baits (page 283).—Is there not a danger of getting pollen in the sections when inserting shallow frames of brood in the super? In any case, the ordinary shallow frame is too deep to use with the 4¼-in. section. I have a number of such worker-combs of the right depth, altered from the shallow "dovetailed" frame. To alter, the end bars are shortened to 4½ in. and the dovetails removed from the bottom bar, when the bottom bar is nailed *inside* the end bars. I shall be glad to hear from anyone wanting a rack of these for experiment.

Bee-Shows to Come.

August 10, at Llanerchymedd, Anglesey.—The County of Anglesey Beekeepers' Association offer the following prizes at their Annual Show. For the best six 1-lb. jars of 1910 Honey, 10s. 6d.; open to all. Entrance fee, non-members 1s. 6d., members 1s. For the best and most attractive display of Honey and Honey Products, £1 1s.; open to North Wales; entrance fee, non-members 2s., members 1s. 6d. N.B.—Only half the prize will be given unless there are three or more exhibitors. **Entries closed.**

August 10, at Midsomer Norton, Bath.—In connection with the local Horticultural Show, Annual Show of the Somerset B.K.A. Increased prizes for honey, wax, and appliances. Several open and free classes. Challenge honey pot for greatest number of points in members' classes. For schedules and particulars apply to the Assistant Secretary, L. Bigg-Wither, Birdwood, Wells. **Entries close August 5.**

August 10, at Wye, Kent.—Kent Honey Show. Four open classes, fifteen open to Kent. Trophy, cup value 3 guineas, two Challenge cups value 6 guineas each, one Challenge cup value 5 guineas, numerous other Special and money prizes. Special classes for Cottagers, also class for Members of Ashford and District Bee-keepers' Association. Schedules from H. C. Chapelow, Hon. Sec., Wye, Kent. **Entries close August 6.**

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. **Entries closed.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same. Free entry for Single Bottle and Single Section. Schedules from S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries close August 5.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 30, at Cartmel, Lancs. — Bee and Honey Show, in connection with the Cartmel Agricultural Society's 38th Annual Show. Open Classes. Schedules from J. N. Parker, Cartmel, near Carnforth. **Entries close August 18.**

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

W. G. B. (Ilkley).—*Uniting Condemned Bees with Stock.*—You will find full instructions on page 107 of "Guide Book." Great care is needed to prevent fighting. Place an empty hive by the stock, remove half the combs, and after jerking off the bees into the hive put the beeless combs into the empty hive, spacing them wide apart and covering them over with a quilt. Dust the bees of the stock with flour, close up the frames, and replace the quilts, then throw out the driven bees in front of the empty hive, and dust them well with flour as they run in. When they are all in, space the combs wide enough to allow of them being alternated with those of the stock, which should have the bees again dusted and placed with the driven bees between the others, when both lots will usually unite quietly.

G. N. (Norton).—*Queen Not Laying.*—1. The queen you send is an aged one, which accounts for her not laying. 2. It is quite possible that the queen-cells were not supplied with eggs, or that any queen hatched may have been lost on her mating flight. 3. Certainly get a fertile queen, as she would commence laying at once, and with a virgin you have to take the risk of losing her. 4. Black bees.

W. D. (Horsham).—*Dead Grubs Cast Out.*—This is usually a sign that the bees are running short of stores, but it may be that as the swarm has swarmed some of the brood has become chilled from want of sufficient bees to cover it, especially at night, and the bees are removing the dead grubs. The hive should be examined, and if short of stores the bees should be fed.

Cwmbwrla (Swansea).—*Bees Settling on Ground.*—It is impossible to say why the bees persist in settling on the ground in patches, unless you can give more information about them. There is no reason why some of the bees should settle in heaps of a dozen on the same place that they swarmed on so far back as June 20. Are the bees able to fly and return to their hive, or do they die on the ground?

H. C. T. (Sturminster Newton).—*The Honey Harvest.*—1. How much longer the bees have to gather honey will depend upon the resources of your neighbourhood. If you have heather near you they may go on to the middle of August. 2. It is impossible to say if the bees will fill the sections, as so much depends on the weather. White clover is plentiful and in full bloom, but the weather is against bees working on it. 3. The queen is an old one. 4. We are pleased you find the B.B.J. so useful and cannot do without it.

Amlwch (Hockley Heath).—*Dealing with Foul Brood.*—Either soluble phenyle or formalin will do equally well, if used as recommended and instructions carried out minutely. Full instructions are given for treatment with soluble phenyle in "Guide Book" (page 182). Formalin should be used of the strength of 10 per cent., and 1½ oz. of this must be placed in the hive in trays sold for the purpose, but it should not be used for spraying combs when bees are at work on them.

A. G. (Alresford).—*Bees Not Working in Supers.*—If, as you say, the brood is healthy and the stock strong in bees, the only reason they have not commenced work in the supers is because they are not able to collect anything from the flowers on account of adverse weather. Now that weather conditions are more favourable no doubt they will go up into the supers where there is drawn-out comb.

J. D. A. (Somerset).—*Bees Building Drone-comb.*—It is probable that the queen heading the English stock is worn out, or it may be that full sheets of foundation were not used in the frames, and in consequence a large amount of drone-comb has been built. If the queen is an old one you should re-queen immediately.

J. P. F. (Cambridge).—*Honey from Diseased Stock.*—The presence of foul brood in a hive does not affect the smell or taste of the honey, which is quite wholesome as food for human beings. Of course we are not referring to honey in brood-combs.

Suspected Disease.

G. S. (Winchmore Hill).—One of the bees sent has died of starvation; the other had a very small quantity of undigested pollen in its stomach. Though the symptoms you describe are very similar to those of "Isle of Wight disease," they may result from other causes. Try feeding with warm syrup medicated with naphthol beta.

Amateur (Worcestershire).—The symptoms you describe are those of "Isle of Wight disease," and other kindred diseases, although the bees sent only appear to be suffering from constipation, the intestines being crowded with undigested pollen.

Constable (Middlesex).—From your description the bees are probably suffering from the "Isle of Wight disease," but we cannot tell from the two bees sent, as they were not only dead but thoroughly besmeared with honey, and not fit for examination. It is not necessary to put honey with bees when they are sent by post, as they only get daubed over with it.

Sussex Bee.—We regret to say that to all appearance the bees are suffering from "Isle of Wight disease." There is no known remedy, and destruction of the colony is generally found best. You might try "Apicure," at the same time feeding with medicated syrup, and let us know the result. As an old subscriber we sincerely sympathise with you.

J. F. (Inverness).—"Apicure" will be the best for your purpose, and one bottle will suffice for four or five hives.

G. O. (North Devon).—There is no disease in the comb, but we should say the stock is short of food from the appearance of the bees in cells. Comb which has been bred in is always of a dark colour. One of the pieces of comb contained drone-brood chilled. The queen heading the stock is evidently a poor one. Feed with medicated syrup, and either re-queen or unite the bees to another stock.

A. B. C. (Wokingham).—The brood is only chilled. There is no foul brood in the comb.

Honey Samples.

T. D. (Mansfield).—1. There is no trace of carbolic in the honey you send. 2. You treated the combs properly. 3. To prevent any possible chance of tainting the honey it is best to use formaldehyde as a disinfectant.

R. B. (Minster).—Sample is good in aroma and flavour, but it lacks density. Gathered principally from white clover.

W. G. A. (Elgin).—You are right in pronouncing the honey "superb." It is the best sample we have seen this year, and the price you ask is a very moderate one for such excellent honey.

W. H. (Northop).—The sample is foreign honey of poor quality. It resembles the Jamaican honey brought over in casks and sold to bottlers at a very low price. We frequently have samples sent to us by disappointed purchasers who cannot understand its peculiar flavour.

G. (Wales).—No. 1 is a first-quality honey, good in density, aroma, and flavour. It is principally from white clover. No. 2 is a medium-coloured honey, good in flavour, with slight heather taste, but somewhat lacking in density. No. 3 is very light, thin, and insipid in flavour.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

COWAN'S HONEY EXTRACTOR, reversible cages, covered, cog gearings, cost 49s., for 35s.; Geared Extractor, 17s. 6d.; Honey Ripener, with strainer and tap, 1 cwt., cost 12s., for 6s. 6d.; good condition; Honey Extractor, barrel shape, new, cost 25s., for 15s. 6d.; Wax Extractor, with strainer, new, cost 12s., for 6s. 6d.; Observatory Hive, for one frame and three sections, cost 30s., for 15s. 6d.—HEWETT'S APIARY, Alton, Hants. c 21

FOR SALE, 30 strong, healthy Stocks, in "W.B.C." and other hives, Cowan Extractor, Ripener, quantity Frames, Honey Tins, Foundation, &c., purchaser to remove; or exchange.—Particulars, W. WILKES, Castle Foregate, Shrewsbury. c 18

WANTED, unmarried man, as gardener, who understands bee-keeping preferred.—Apply, C. H. HAYNES, Hanley Castle, Worcester. c 7

STRONG, HEALTHY STOCK, well stored, 21s. —Rosehurst, Pannal Ash, Harrogate. c 19

OBSERVATORY 3-FRAME HIVE, oak frame, polished white wood panels, as new, 33s.—ANDREWS, Longthorpe, Peterborough. c 22

SCOTCH SECTIONS FOR SALE, 10s. 6d. per dozen.—C. GARFITT, Coupar Angus, Perthshire. c 17

WANTED, Small Extractor, standard and shallow frames, cheap.—GREGSON, Ashton-street, Lytham. c 15

WANTED, Section, also Extracted Honey. Good price given and tins provided.—BEE-KEEPER, 33, Carfax, Horsham. c 14

Special Prepaid Advertisements.—*Continued.*

FOR CASH, or exchange for Honey, 1 Wells, complete, 12s.; 1 "W.B.C." Heather Hive, 6s.; 1 Taylor's Non-swarming "W.B.C.," 6s.; 1 "W.B.C.," 6s.; 1 Leary Hive, 12s., takes two stocks; several Cottager Hives, take ten frames, 4s. each; 12 Simmins' 16-frame Hives, zinc-covered roofs, 10s. each.—J. GRATTAN, Expert, 54, Herbert-road, Plumstead. c 13

FOR SALE, cheap, 1 Double Hive, 3 Hives, 3 Excluder Zincs, 24 Drawn-out Sections, 1 Section Rack (drawn out), 22 Standard and 26 Shallow Frames, 55 Section Dividers (tinned iron), 5 dozen Sections, in flat, 2 Celluloid Quilts, 100 Metal Ends, Observatory Hive, partially finished; 30s. the lot, on rail Steeton.—HY. BUTTERFIELD, Gas Works, Silsden. c 5

FOUR NEW WELL-MADE "W.B.C." HIVES, painted white, 14s., or exchange for Driven Bees; also 12 good Skeps, 9d.—Particulars, T. ATKINS, Leire, Lutterworth. c 9

FOR SALE, 4 strong Stocks, in bar-frame hives, guaranteed healthy, 25s. each.—SHAW, Boreham Wood, Herts.

FOR SALE, Brick-built Bungalow, 1½ acres, suit bees and poultry, £220.—SHARP, Cockfield, Suffolk. c 3

SEVERAL HIVES OF BEES FOR SALE, in "W.B.C.," £1 10s.; others, £1; as new.—THOS. DE VERE, Harbledown, Canterbury. c 2

FOR SALE, Lincoln Elk Motor Cycle, 3½ h.p., in good condition; also 3 h.p. Lloyd Motor Cycle, with new tyres, carrier, horn, tools, &c.—Apply, H. DRAYTON, New Bolingbroke, Boston. b 88

NEW LIGHT SCOTCH CLOVER HONEY, £3 cwt.; sample, 3d.—T. RULE, Summervale, Annan, Dumfriesshire. c 80

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige?—HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free.—Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

BUSINESS ANNOUNCEMENTS.

1910 QUEENS, 3s. 6d.; safe arrival, introducing cages; Virgins, 1s. 6d.—TOLLINGTON, Woodbine Apiary, Hathern, Leicestershire. c 6

HEALTHY DRIVEN BEES, with Queen, 5s. per lot, boxes returnable; spare Queens, 2s. 6d. each.—MORETON, 2nd Class Expert, Hallow, Worcester. c 8

HEALTHY DRIVEN BEES, 5s. per lot, package free. Orders executed in rotation.—AVERY, Deverill, Warminster. c 4

DRIVEN BEES, healthy, properly packed, 5s. 6d. per stock.—Mount Pleasant, Kington, Worcester. c 12

TWO STRONG STOCKS OF BEES, on eight frames, £1 each; Swarms, 7s. 6d.; on four frames, 10s. 6d.; Fertile Queens, 3s.; Driven Bees, commencing August 10, 5s.; carriage paid.—BLAKE, Knowstone Vicarage, Southmolton. c 16

WANTED, Sections, perfect; also best quality Run Honey.—YOUNG, chemist, Nantwich. c 10

Editorial, Notices, &c.

THE CARE OF HONEY.

The honey harvest is drawing to a close, and those who have been fortunate enough to live in districts where bees have been able to store surplus will have to take proper care of the honey before they can hope for a profitable sale. It is frequently easier to get the crop than to take care or dispose of it. The bee-keeper who can secure the best product his locality will yield, and keep it in good condition until he can sell it profitably, can with propriety be called a bee-master, for he has reached the highest perfection in the industry. We have much information as to how to get honey, and a great deal has been written about selling it, although at times we have complaints that some have difficulty in disposing of their product, but as to the preservation of honey until it can reach the table of the consumer there is not so much said as should be. The subject is of importance to the producer and consumer, and the ignorance of how to preserve honey in good condition until it is wanted is not confined to the latter. The prevailing ignorance is one of the causes of the popular notion that honey is frequently adulterated. Comb and extracted honey may undergo so much change and deterioration without adding to it or taking anything from it, except what by improper handling it has absorbed from the atmosphere or lost by evaporation, that adulteration is easily supposed by the uninitiated. This deterioration naturally diminishes the consumption, for as honey is still regarded as a luxury and not a staple article of food, as it should be, people do not want an insipid and inferior luxury, which they will not tolerate, although they may do so with a staple article of consumption.

It is much easier to point out these facts than to tell how to preserve honey just as good as when taken from the supers. Comb honey cannot be kept under the best conditions for more than a year, while extracted honey could be kept for very much longer without deterioration, if proper precautions are taken. Granulated honey, even if properly liquefied, is a little changed in flavour from that which has never granulated, and some of the finest-flavoured comb honey will lose in flavour within three or four months of production, in spite of all we can do. To preserve comb honey in the best condition each section should be wrapped in three or four thicknesses of tissue-paper and stored in a dry, warm place, well ventilated, and where the temperature is never allowed to get below 80 deg. Fahr. Any lower temperature, or when it fluctuates much, such as going down from 80 deg. in the day to 40 deg. or 50 deg. at night, deteriorates honey very rapidly. If the place is damp the honey will absorb moisture and ooze through the cappings, and the honey will be found to be greatly deteriorated and quite unpalatable, as well as unsaleable. The best that can be done with extracted honey is to thoroughly ripen it, and then draw it off into tins and seal it up air-tight. It can then be placed in a dry, warm place kept at a temperature of 80 deg. Fahr., so as to prevent it from granulating. If this temperature cannot be maintained, place the honey in a dry, cool room, and when granulated liquefy slowly in warm water, and cool rapidly. Then leave it sealed up air-tight until used. If allowed to remain granulated until wanted it should never be kept in a warm place.

GLAMORGAN B.K.A.

ANNUAL SHOW.

The annual show of the Glamorgan B.K.A. was held, in connection with the Cardiff and County Horticultural Society's show, at Cardiff on July 20 and 21. The weather on the opening day was unpropitious: all through the morning there was a heavy, overcast sky, and towards four o'clock a light rain commenced to fall, which developed about six into a steady downpour, which lasted through the evening. In spite of this, a good number of visitors took a keen interest in the honey section of the show, although the bee-demonstrations had to be abandoned for the day. The entries were not so numerous as usual, several bee-keepers being in the position of being "not quite ready." Thos. W. Cowan, Esq., F.L.S., judged the exhibits, which were of excellent quality, some beautifully-finished sections and Mr. Wakeford's observatory-hive being especially admired.

On Thursday morning the school children visited the show, and special lectures on bee-keeping were given by Mr. W. O. Jones. Better weather prevailed, and resulted in a good attendance, large numbers visiting the honey section and the bee-demonstrations which were given at intervals.

The Rev. H. Morgan held a conference of the local experts to discuss the details of their work in the various districts, and gave instructions as to steps to be taken in reporting and treating foul brood. The following were the awards:—

Twelve 1-lb. Sections.—1st, Sam Lewis, Bridgend; 2nd, G. Tudor Williams, Aberdare.

Twelve 1-lb. Jars Extracted Honey (Light).—1st, W. T. Gunter, Cowbridge;

2nd, G. F. Braddick, Canton; 3rd, Danl. Rees, Kenfig Hill.

Six 1-lb. Jars Extracted Honey (Medium).—1st, W. T. Gunter; 2nd, Thos. Davies, Kenfig Hill; 3rd, G. F. Braddick.

Six 1-lb. Jars Extracted Honey (Dark).—1st, G. F. Braddick.

Beeswax (not less than 1 lb., in retail form).—1st, F. Gravil, Cardiff; 2nd, G. F. Braddick.

Articles of Food Containing Honey (recipe attached).—1st, G. F. Braddick; 2nd, Miss Elsie Gravil; 3rd, Thos. D. Richards.

Bee-candy.—1st, Miss Nancy Gravil.

Observatory-hive, with Queen and Bees.—1st, S. Wakeford, Dinas Powis.

NOVICES' CLASS.

Six 1-lb. Jars Extracted Honey.—1st, John James, Canton; 2nd, Danl. Rees.

OPEN CLASS.

Collection of Appliances.—1st, E. Burtt, Gloucester; 2nd, John Hibbert and Sons, Cardiff.

PRIZES GIVEN BY J. HIBBERT AND SONS.

Six 1-lb. Jars Extracted Honey (Light).—1st, W. T. Gunter; 2nd, S. Wakeford; 3rd, G. F. Braddick.

Six 1-lb. Jars Extracted Honey (Dark).—1st, G. F. Braddick.—W. J. WILTSHIRE, Hon. Sec.

MAMMOTH SHOW AT CAMBRIDGE.

Not the least important section of the Mammoth Show is the honey section; indeed, the Mammoth honey show is fast becoming known as the best exhibition in the United Kingdom. There is a specialist at the head of affairs, Mr. Dant, the manager of the section, himself a winner of leading awards at the "Royal" Show for several years in succession. Despite the fact that owing to the bad weather many large exhibitors were unable to show at all, the entries at the Mammoth were rather larger than in any previous year, and the quality all round was excellent, fully maintaining its reputation. The fame of Cambridgeshire as a honey-producing county is established, and it is therefore not surprising that although every class was an open one, Cambridgeshire exhibitors headed class after class, competing with bee-keepers from all parts of the country.

A special prize for a unique exhibit was won by Miss Baden-Powell, a London bee-keeper and sister to the famous General. Her exhibits were indeed remarkable. There was a glass case of honey-comb in a Persian design, and she showed another piece of work done by her bees in the shape of fresh snow-white combs in a wonderfully neat little rotating glass hive, admirably adapted for observation of the bees. It is seldom indeed that one hears of bees being kept in London, and still less often does one hear of bees hiving and working well in a drawing-room, but Miss Baden-Powell's bees must be wonderfully docile. They seem to work equally well in any pattern she chooses to set them, from the Prince of Wales's feathers, which they have rendered most beautifully, to a simple "B.P." in honey-comb.

The judges of this section were Mr. R. Brown, of Somersham, and Mr. Allen Sharp, of Royston. Mr. E. F. Dant acted as hon. secretary, and was assisted by the following stewards: Messrs. R. H. Baynes, Jas. Lee, G. Hills, J. Short, and A. Barber.

BEE AND HONEY SECTION.

There were a few more entries in this section than last year, but the quality was far in advance of anything previously seen at the Mammoth. The prize-winners were:

Best Display of Honey in Any Form.—1st, R. H. Baynes, Cambridge; 3rd, G. Hills, Coton.

Special for Unique Exhibit.—Miss Baden-Powell, 32, Princes Gate, London, S.W.

Sections.—1st, A. W. Weatherhogg, Willoughton, Lincolnshire; 2nd, R. H. Baynes; 3rd, A. S. Gibbs, Bartlow; v.h.c., C. W. Dyer, Newbury; h.c., W. Jarman, Royston.

Bottles of Light-coloured Honey.—1st, R. W. Lloyd, Thetford; 2nd, J. Lee and Son, Fulbourn and London; 3rd, A. S. Gibbs; 4th, special, R. Morgan, Cambridge; v.h.c., R. H. Baynes.

Bottles of Medium-coloured Honey.—1st, R. H. Baynes; 2nd, C. J. Mapey, Cherryhinton; 3rd, G. Hills.

Shallow Frames for Extracting.—1st, J. Lee and Sons; 2nd, G. Hills.

Six Sections.—1st, R. H. Baynes; 2nd, G. Hills; 3rd, C. Holmes; v.h.c., J. Lee and Son; h.c., A. Barber, Comberton.

Light-coloured Honey.—1st, A. Jackson, Thetford; 2nd, R. H. Baynes; 3rd, C. Daniells, Balsham; v.h.c., J. Lee and Son; h.c., A. Barber.

GIFT CLASSES.

Section (to be presented to Addenbrooke's Hospital and Victoria Asylum).—1st, H. W. Saunders, Thetford; 2nd, H. J. Dowsett, Great Thurlow; 3rd, C. Holmes; v.h.c., R. H. Baynes; h.c., A. S. Gibbs.

1-lb. Bottle (to be presented to Addenbrooke's Hospital and Victoria Asylum).—1st, H. W. Saunders; 2nd, C. Rainier, Newmarket; 3rd, A. Jackson; v.h.c., C. B. Tupling; h.c., R. W. Lloyd.

Special for a very fine six-frame ob-

servatory-hive, which attracted thousands of people visiting the show and was very instructive, awarded to Messrs. Jas. Lee and Son, Ltd., Fulbourn and London.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PROSPECTS IN CANADA.

[7878.] I send a short reply to Mr. Couper (page 297), who cannot have read my letter in the first instance, or he would not have written what he has. My intention when writing was not to say a word in abuse of Canada - my abuse is for the gamblers, who are a pest in any society. These men have a good share of dollars in their pockets, and they buy up the most desirable parts of the land and hold them until a man comes along who wants to settle and make his living here. He finds the land in the hands of these gentry.

Uncertainty of Labour.- First a little personal explanation as to not holding my job. I did nine days' concreting for one firm, when the job finished; I did a relief job for a cook who was ill for ten days; another six weeks up to the New Year while the busy time was on. Then all went flat; 10 per cent. of men here can get regular work, the remainder about five months. After that, pick up anything to fill up with. To-day 500 men could get work here: in three months the job is ended; and what are your men to do? The waterworks here in summer have 200 to 300 men on, in winter only twenty, and the remainder can get no job, even at less wage. I know as much about Saskatchewan as my friend seems to know about British Columbia and its regular work for efficient men. Our fruit inspector here, interviewed by a reporter of the *Colonist*, made a statement that there were 50,000 acres of fruit lands round Victoria awaiting settlers. I went to the land office to see where it was. They had none. No, it was in the hands of the gentry I have named. I wanted land for fruit and bees, and found good fruit land was $500 to $1,000 an acre. Land is far cheaper in the South of England than here. Homesteads, where are they in British Columbia—I mean 160 acres free to the settler?

One Government official said that every man coming to Canada was worth £200 to the State; then it is worth while to see to the comfort and well-being of that individual, and my suggestion is the country wants the agriculturist, and it is so vast that every man should have land free on condition of development, not to trade in it, but to live on it; and if unforeseen events caused the man to quit, the State should receive the same back at a fair valuation for the improvements he has made. The next suggestion is that the whole family should come, not the man alone; then the man will fight his battle more manfully and have far greater opportunity of success. I am in association with a society here whose business is to pick up the social wrecks and set them on their feet again, and my experience is that nine-tenths of the men who have wives in the Old Country cannot get them out: the uncertainty of labour, &c., drives many to despair, and they let things slide; and the result is the Old Country is keeping the family, and the man in the New keeps himself! We have hundreds of single men here, most of them living in cabins, one room—wretched dens. What value are these men to the State? My contention is the single men cannot afford to get married, and the married cannot get the money to bring out their families. The land question is at the bottom of all the trouble. Wherever I dwell I take an interest in the well-being, and try to play the man in the uplifting, of the city or State, and should anyone ask my opinion on a subject, if I know anything that will help that individual I give it with all the love in the world. I am as much interested in the well-being of Canada as any man —for is it not a piece of the British Empire?—and as jealous of her glory and honour being untarnished as any patriot; but if there is a canker in the State a wise statesman would set himself to remedy it and not abuse the individual who points it out, *pro bono publico*. Bricklayers get $5 for eight-hours day, plasterers $6 for eight-hours day, concretors $2¾ for nine-hours day, joiners $3½ for eight-hours day, longshoremen 40 cents per hour, gardeners $2½ for eight-hours day, painters $3½ for eight-hours day, labourers (city waterworks) $2¼ for eight-hours day, tram guards $1.80 for nine-hours day, shop assistants $12 to $15 per week. The principal person is the labourer, and no man need come here unless he is ready to use the pick and shovel. We have had men come to our waterworks begging for work at $2¼ per day—engineers, University men, architects, joiners, bakers, and every class of man under the sun. The above list looks very rosy; but let us examine it. The principal man in it is the labourer—all the others are insignificant compared with him. If he works full time he will average $2¼ per day or $60 per month. I am

quoting now a man whom I have had brought to my notice, a steady, reliable man. He pays grocery, per month, $30; rent, $16, his taxes being $1; gas costs, for illumination $2, for cooking (per 1,000 ft.) $1½; coal costs per ton $7½. You pay $20 to $30 for a suit of clothes; boots (decent ones), $10 to $12 per pair; apples cost $2½ to $3 per 40-lb. box; oranges 35 cents to 50 cents per dozen; flour, per 50-lb. bag, costs $1.85. Then there is the wife to clothe. This man has no family. But another working man, who has had two children here, told me that the first cost him $80, the second $75. I ask you, what has this man left if he has full time all the year round? But he has not; he can only average five months, and the rest is broken weeks. He is behindhand at once and in debt. These prices are at Victoria, and I am speaking only of what I know, and the only object I have in view is to reply truthfully when I am asked what I know about a place in which I am living.

If I might suggest a cure for this state of things, it is that the working man should have, say, three acres of land with his house—that is, outside the city—so that he could in his interval of enforced idleness grow his own foods, and thus make a strong, bold peasantry, the country's pride, and it is as true here as Goldsmith said in "The Deserted Village" that:

> Ill fares the land, to hast'ning ills a prey,
> Where wealth accumulates and men decay.

—E. A., Victoria, B.C.

[With reference to above, we print an extract from the *Daily Telegraph*, which hardly bears out our correspondent's contention that work is scarce. We have also had information from private sources that the supply of labour does not equal the demand in many trades:—

"A LABOUR FAMINE.

"Western Canada's dominating problem is the scarcity of labour. With the approach of the harvest season it is invariably a source of anxiety to the farmer, and as the area under crop steadily expands the difficulty increases year by year. It is not, therefore, surprising that the question should have been the subject of anxious consideration at the annual convention of Associated Boards of Trade, held recently at Brandon. Some idea of the extent of the dearth will be gathered from the statement made at the conference that in Manitoba alone, the smallest of the three prairie provinces, the provincial Government had reported that no fewer than 35,000 farm labourers and nearly 5,000 domestic servants were needed. The area under crop in the West is 15 per cent. higher than last year, and reaches a total of not much short of 30,500,000 acres. Probably the partial failure caused by the drought will ease the situation, but nevertheless it must remain sufficiently serious to call for heroic measures. The convention passed a resolution urging that the Dominion Government and the provincial authorities of Manitoba, Saskatchewan, and Alberta should co-operate with the railways and the eastern labour exchanges in an effort to secure workers for the harvest. It was also decided to ask each of the Governments to appoint one or more commissioners to collect reliable information as to the number of hands required, and to assist in their systematic and equitable distribution. Representatives of the railway companies at the convention took a gloomy view of the prospects. They stated that there was a scarcity of men not only for the harvest field but for railway construction, for building operations, and even for the working of the railways. The tone of the whole discussion showed that the convention were alive to the gravity of the problem, and the existence of a well-founded fear that with all possible efforts the supply could scarcely be adequate to the demand."

—Ed.]

USING CHLORIDE OF LIME FOR FOUL BROOD.

[7879.] I herewith enclose sketches showing how chloride of lime can be used to prevent or to assist in the cure of foul brood without disturbing the bees. I trust the following description will be of assistance to brother bee-keepers who wish to use chloride of lime:

In the drawing Figs. A, A shows two ⅝-in. or ½-in. boards fastened to the old floorboard, leaving a 2-in. or 3-in. space between them. A piece of perforated zinc (B) is tacked over this well, so that the bees cannot get into it. This is cut in the drawing to show the construction. At C the space has a block of wood the same thickness to cut off the entrance from the well. D, D represents a slide or carrier (for the disinfectant), which is made of very thin wood. The body-box is shown with frames running parallel to the entrance. A piece of the back plinth is cut out (E), so that the entrance to the well is exactly opposite. The loose dovetailed piece E should fit in, and have a screw or nail driven into it for handling.

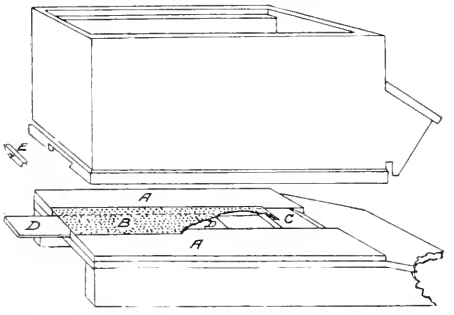
With the body-box in position the slide should pass in and out easily when loaded with disinfectant. When loaded, push it home, replace E, and watch the effect. If you have used so much chloride of lime that the bees are disturbed, withdraw the slide, thereby letting in fresh air, and replace with a smaller quantity. Three moderately well filled teaspoonfuls used in

this way will not disturb the bees at all, while the same quantity dropped amongst them would cause considerable disturbance, if not absolute injury. For small hives use only two teaspoonfuls.

Note.—The disinfectant runs directly under the centre of all the combs—a decided advantage. For hives with combs running from the entrance to the back the arrangement must be made to run from side to side.

In case of foul brood having broken out, withdraw slide, scrape clean, and reload, three times a week. For prevention, once a week or fortnight is sufficient. Last year I had four colonies attacked badly, owing to the importation of a diseased colony. I followed the above plan, and in addition I used medicated syrup. A really bad comb was withdrawn and burnt, together with the frame and "W.B.C." ends.

A comb with but a few bad places would be placed near the dummy, and when what



bees would hatch out had done so it would be withdrawn and thoroughly sprayed with disinfectant (see "Guide Book").

In all my operations I kept disinfectant handy, frequently to dip my hand, &c., in.

The results are that this year I have four healthy stocks—no sign of foul brood in either—and my other stocks standing by them in good condition.

I trust that other bee-keepers will try the above method and will benefit thereby. —Chas. J. Ashworth, Wilts.

LIMNANTHES DOUGLASII FOR BEES.

[7880.] Is *Limnanthes Douglasii* of any value as a bee-flower? My observation leads me to think it is not. I have grown it for the last four years, and have rarely seen a bee approach it. This season I have planted it more extensively, in four different positions in the garden, and within 2 ft. of the bee-colony, and have had a succession of bloom since April, but on no occasion have I seen a bee visit it. A relation in Hertfordshire, who has had it flowering in her garden for many seasons past, was surprised when I told her it was a bee-flower, as she had never observed that the bees were at all partial to it. An examination of the flower does not (to me) reveal any abnormal condition—that is, there does not appear to be a superabundance of nectar or of pollen. It will be interesting to know the opinion of others.

Apart from its possible value to the apiarist, the plant is worthy of more extended cultivation; it is not so well known as it deserves to be, and it is one of the most charming of our summer flowering annuals and very hardy.—W. Burbridge, Surrey.

EFFECTS OF STINGS.

[7881.] Although I cannot exactly lay claim to the title that your correspondent (7865, page 286) of last week asks for, I may perhaps by these few remarks be able to turn the thoughts of others more capable than myself in the right channel, the result of which may, I hope, be something to benefit us all, or at least prove of special help to those who, through some cause or other, feel acutely the sting of a bee.

Your correspondent says that he suffered most when stung during hot days. This, I think, has more to do with it than would at first appear; whilst his mentioning the seat of injury convinces me that it is more than likely I am right when stating the following facts. The first direct results of hot weather on a human being are: 1. His power to resist any drug or poison is greatly lessened. 2. His circulatory system is increased both in power and speed; consequently it carries rapidly anything introduced into it. On the other hand, bees are decidedly more lively, and taking the chances of its being a young bee, full of dash and venom, not to mention ignorance, it is much more capable of causing greater injury.

Then we have to remember the nature of the poison itself. It is rather a strong cardiac sedative, and powerfully influences the motor centre; whilst its mode of introduction into the body makes a small dose very powerful and swift in action. In medical practice, as a rule, the dose of a drug by hypodermic injection is equal to about 3 to 8 drops of water, and this is not concentrated, of course; whilst the effect is most times produced in less than three minutes, the length of time depending on the spot where the injection is made, it being very quick if made on or near a blood-vessel, as was the case in the sting on the temple, also that on the eyelid. In both these cases the poison would reach its centre of action in a very short time, and that without being very greatly diffused; so that the coupling of its maximum result with perhaps some idiosyncrasy on the part of the sufferer would easily account for his sudden collapse.

The chemical antidote is, as everyone knows, ammonia, which on meeting with the poison in the blood stream combines with it to form a new substance, hexamethylenetetramine, or urotropine, which is a urinary disinfectant only, and can be taken in fairly large doses without any untoward symptoms. But to run about among your bees with a hypo. of ammonia is impossible, so I should like your correspondent to obtain his doctor's permission to take (per month), say, 9 grains of ammonii carbonas, obtainable from manufacturing chemists in tabloid form, about ten minutes before he next manipulates, and let us know his experiences—that is, if he has the luck to be stung in the same places again. I think he will be pleased with the results of the experiment. I myself feel no effects of any short of a dozen at the time, so cannot give you the benefit of my knowledge of its claims to be called an "all-cure" or "cure-all." The idea is to have the ammonia in solution in the blood stream ready to react as soon as stung.

I was very interested in the letter from Sgt. S. Spencer a few weeks back, and as a bee-keeper admire his pluck, whilst as a fellow soldier I long to make his personal acquaintance, for I am sure anyone would benefit by the knowledge he gained in such a first-hand fashion.

May I, please, just append this question? Is it absolutely necessary, is there any physical reason, that compels a virgin to make a mating flight? I have never seen it stated that it *is* necessary, neither have I ever seen the suggestion that it may sometimes not take place, even though the queen gets fertilised. I have the doubt.—A. F. L., Chatham.

[It is a well-established fact that mating takes place in the air, and if from any cause this is prevented, the queen remains a virgin, and is only capable of laying eggs which produce drones.—Ed.]

MID PIKE AND FELL.

[7882.] Wilberfell is one of the mighty buttresses of the Pennines, an advanced sentinel, pushed forward to guard Mallerstang, that rocky pass where Westmorland is entered from York, and rising almost from the bank of the river flowing between is Morville's Seat, equally precipitous, but not so tall. A conspicuous landmark is the Fell. It may be seen from almost any standpoint in the Eden valley. You pass its foot as you travel north by the Midland, but so steep is the ascent that you needs must be lithe of limb and crane your neck to see its summit. Your matter-of-fact traveller of the present day, deeming sentiment almost a crime, little knows, as he watches the landscape from the windows of his luxurious saloon, that nearly every cliff and every mile has a history—some indeed legendary, others written in blood and steel in his country's annals. I narrate a few as specimens.

In days of old—what time the chronicle sayeth not—there dwelt on Penrith's Beacon a mighty giant; not one of the ferocious cannibals of the Jack-and-the Beanstalk race, but a "good old sport," mild of temper and amiable of disposition. He was a great hunter. In modern days he would have taken passage to South Africa and emulated the great Theodore. Then he had to be contented with hunting of wolves and wild boars. It is related that he slew the last of the tusky monsters on this hill. Even now it is called Wildboarfell, contracted to Wilberfell. Full of years he died, and hard by the old church tower lies buried.

His grave is green;
It may be seen
Twelve paces or more from the church door.

Two rough blocks of old red granite mark where he lies, and the interval between is 13 ft. Sir Walter Scott cherished his memory, for never did he visit Penrith (my informant is the white-haired old sexton), but he paid a visit to his grave. Far distant may that day be when some infidel, some iconoclast, delighting to submit these tales to an X-ray scrutiny, may have sufficient influence to have his bones disinterred and measured. I reck little what the finding may be. I would sooner hug the deceit. Dull and listless will that time be when all romance, all glamour sifted away, life is reduced to the level of a proposition of Euclid.

Hugh Morville's Seat is the other guardian of the defile. For good and also for bad, Westmorland men have left their mark in England's history. The time was 1170. The second Henry ruled England—a king so passionate that it is recorded he would have torn out the eyes of a page with his own hands who had presented to him an unpleasing letter, and so untruthful that he was believed by no person. "Better repent of words than facts" was his maxim. Thomas à Becket was his Chancellor; first his favourite: then, for he could brook no contradiction, the object of his hate and almost fear. In a hasty moment he had demanded "of the cowards who eat his bread was there not one to rid him of this turbulent priest." Hugh de Morville and three others mistook passion for royal permission, and in Canterbury Cathedral did that murder which, crying to heaven for vengeance, nor king nor knights knew peace. Little remains of Morville's Castle on this hill. His lands were confiscated—King's Meaburn they are called at the present day. Pleasant, well watered, and fertile, they lie not distant. Henry, the greater sinner, false even in the

degrading penance he endured, had the meanness to draw advantage from the crime his servant had committed. Little wonder such a father was punished in his children.

> Let Uter Pendragon do what he can,
> Eden will run, where Eden ran.
> (Westmorland saying.)

Pendragon Castle is just in the neck of the pass, where it takes a turn north by west. Vortigern has the reputation of building it, in that mythical time when Arthur and his knights made quest of Holy Grail. Certainly its architecture is of earlier date even than Saxon. Now this Uter Pendragon was a man of marvellous gifts, a beau, yet no carpet knight, of cultivated taste for the times in which he lived, but a roué, endowed, indeed,

> with each gift of nature, and of art,
> And wanting nothing but an honest heart.
> His passion, still to covet general power;
> His life, to forfeit it a thousand ways.

And he had an idea that his castle would be much strengthened if he could persuade the River Eden to alter its course some score of yards to run round and so to form a moat. But rivers, like facts, are "stubborn chiels," and have a will of their own. They are coy to leave the channel in which they have travelled since the mountains divided and gave them passage, at the bidding even of Uter Pendragon. Therefore, although he cut his moat, the spirit of the stream was not to be tempted. And there it remains even to this day a monument of Uter's folly. In the North Country, if a couplet is needed to emphasise obstinate perversity even to the impossible, or the utter folly of "banging one's head against a stone wall," it is at hand in the old rhyme; how true it is:

> The evil that men do lives after them;
> The good is oft interred with their bones.

—J. Smallwood, Hendon.

DEALING WITH FOUL BROOD.

[7883.] Like the monk in the play, "I've been seeing such lots of funny things lately" in connection with my bees and my friends' bees also. I have been troubled with that dreaded complaint foul brood. How it arrived I am at a loss to find out. After trying various cures with little apparent result, I fell back upon the starvation method with two lots, so far with success, as I can find no trace of the disease now. The third lot I was about to serve in the same way, when I noticed a new cure advertised, and at once procured a supply, and proceeded as directed to cure.

Everything appeared satisfactory for a week or ten days, and I had a good look at them on July 27. After examination I covered them up and went on with other work in my garden until 7.15 p.m. I first glanced at the hive in passing, and was debating in my mind whether to go on with the cure or starve them when, to my surprise, all the bees swarmed out and circled around as at midday for about twenty minutes, and then gradually came back and went into the hive. I did not disturb them again.

The next morning there was nothing unusual about the hive, but at noon I happened to pass the garden, and found they had left the hive again and clustered on the front of another hive. I got them into a small box, and I am starving them, and intend to put them into a small hive.

What can be the reason for their behaviour? It is only a small lot on four frames, with a young queen hatched the first week in June. The first time the bees came out the queen evidently did not come out, but the second time she did. I can only conclude that the bees had made up their minds it was no use spending their time any longer feeding larva for a few days and then to see it die.

Another strange thing happened to a friend of mine—a beginner unfortunately. I hived a swarm he had fetched from a distance on a Saturday evening. After settling down they all came out again and clustered in front of the hive. He got them into the skep again, and they were all right on the Sunday and Monday morning. I went on the Monday evening to try to get them into his new hive, when to my surprise the lot had gone. We searched around for them, and eventually found a small cluster about 500 yards away—evidently where the main body had been some time previously, but we could find no further trace of them.

I do not know what sort of a season my fellow bee-keepers have had, but my own has been very disappointing. In the early part of the season everything seemed promising, but the poor things have had no chance of doing anything on the clover or the limes; they could not work more than a day or so at a time.—J. L. Brierley, Worcester.

[It is difficult to say why the bees left the hive. Had we not known our correspondent to be a careful bee-keeper, we might have suspected want of food as the cause. The only other reason we can suggest is that too large a quantity of the remedy was used for such a small lot. The other case was one of an absconding swarm. Swarms will occasionally come out again and fly away after being in a hive for a day or two, especially if no food is given. To prevent this it is well to give a frame of brood to newly-hived swarms.—Ed.]

Queries and Replies.

[4034.] *Feeding and Re-queening.*—1. If you wished to have a stock extra strong (say) at the beginning of May, how would you treat its store? When and how would you feed? Would you give artificial pollen in spring? 2. Do bees degenerate rapidly? How many seasons would you allow a stock to run without introducing "new blood"? 3. What in your opinion is the best working, hardiest bee? 4. I have seen earwigs in hive. Do they do harm? How can I rid the hive of them? 5. In ordinary cases do seven standard frames filled to brood-chamber suffice for winter store without feeding? 6. What does sainfoin and clover honey sell at per quarter stone? Sainfoin is unknown here. Do you think it would thrive?—MacEwan, Ardrishaig.

Reply.—1. If an abundance of stores, then bruise the cappings round the brood-nest. If food is short, then feed above the frames with a bottle-feeder giving about two holes. 2. Queens should not be allowed to remain more than two years. An exceptionally good one may occasionally be allowed a third year, but this is the limit. 3. The British bee is the best. Selection should be carried out in breeding. 4. They will occasionally perforate the cappings of honey in supers, and also they should not be tolerated on account of their excreta. Powdered naphthaline in the rebates will generally check them. 5. There should be about eight frames well filled with stores, i.e., about 30 lb. for winter. 6. Sainfoin and clover honey will fetch from 7d. to 9d. per pound. Sainfoin will only grow where there is a chalk subsoil, and its cultivation is confined principally to the southern counties of England.

[4035.] *Supers and Selling Honey.*—I shall be very glad if you will answer the enclosed in your journal. I am the possessor of seven strong stocks of bees. One stock was queened last year with a pure-blooded Italian, for which I paid 8s. 6d. From this stock have come very large swarms indeed, both last year and this. I fed my bees with candy quite to the end of May this season, and when the supers were put on by an expert he saw every evidence of large stores of honey, as the bees were unusually strong. I filled up the non-swarming hives with shallow frames as well as supers. In all I have had three hives swarm. I took off my supers as follows: twenty-six sections filled and sealed over; about sixteen partially filled and sealed; and about twenty-four practically empty; just small patches of honey only. The shallow frames are untouched.

I am both surprised and disappointed, as my apiary is well appointed and everything in good order, and this being my fifth year of bee-keeping I was hoping for a small return.

Can you account for the honey-harvest in my case being such a failure? A neighbour half a mile away or less has taken over 100 lb. of honey from eight hives, but none have swarmed. If I live till next year I shall try shallow frames altogether. Is this advisable?

Another point I should like to touch on is the wretched price bee-keepers receive for honey, the highest offer about here from London buyers being 7s. per dozen. Now when you think each fully-filled section costs one penny, and that barely six coppers is the highest price for a perfectly filled, exquisitely finished section of honey, I say there is something wrong with the sellers that they do not combine together and realise the price gained by the shopkeeper, namely, 1s. per section. Why cannot we have a bee-keepers' union, and so prevent the shopkeepers getting the real profit? Lots of cottages in this district keep bees, but they all protest against the price given for honey, and several have said to me: "What is the good of lectures being given advising bee-keeping when such a poor price is offered for English honey?"—Freda.

Reply.—The peculiarity of the season is as you state—in one district very little honey has been stored, while only a few miles away there is an abundance of honey in the supers. We must put it down to the vagaries of our climate. As a rule more honey is obtained by working with shallow frames than sections, as the super is not split up by the dividers, but allows the bees to cluster in a compact mass and so keep up the temperature better. A combination of bee-keepers for selling has been tried and failed, for the reason that the bee-keeper sold all his best produce himself and sent on his inferior to the central depot. Many bee-keepers realise a good price for their honey, sell all they produce, and also buy from other bee-keepers to keep this customers going. It is a matter of business ability of the individual.

Bee-Shows to Come.

August 17, at Lancaster. Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. Seventeen Classes for Honey and Bee Produce, also for Bee-Hives; numerous specials, including two silver challenge cups, twelve silver and bronze medals, &c. **Entries closed.**

August 17 and 18, at Shrewsbury.—Annual Show of the Shropshire B.K.A., in connection with the Shropshire Horticultural Society's Floral Fête. Ten Open Classes for Honey and Wax. Twelve silver and bronze medals, also cash prizes for same.

Free entry for Single Bottle and Single Section. S. Cartwright, Hon. Sec., Shawbury, Shrewsbury. **Entries closed.**

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. Entry fee 1s. Schedules from C. Salmon, Hon. Sec., Elworth, Sandbach. **Entries close August 13.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 27, at Kettering.—In connection with the Wellington-street Working Men's Horticultural Society. Class for Honey (open): One 1-lb. jar of honey, to be sold, proceeds to be given to the Convalescent Home. First prize, 7s. 6d.; second, 4s. Entries free. Schedules from Hon. Sec., W. Heritage, 114, King-street. **Entries close August 25.**

August 30, at Cartmel, Lancs. — Bee and Honey Show, in connection with the Cartmel Agricultural Society's 38th Annual Show. Open Classes. Schedules from J. N. Parker, Cartmel, near Carnforth. **Entries close August 18.**

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 14 and 15, at Cambridge.—Honey Show, in connection with the Cambridge and District Red Cross Horticultural Society. Four open classes. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, 52, Bridge-street, Cambridge. **Entries close September 10.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

S. J. F. (Coverack).—*Moving Bees.*—If the hives are prepared for moving in the way described in "Guide Book," and kept in a cool, dark place, you could safely leave them thus packed for a week. Give the bees plenty of room by placing an eke on the bottom. If you are not able to keep the bees cool and in darkness, it would be difficult to confine them for so long without exciting them too much, and, as they could not fly, dysentery would result.

E. N. P. (Manchester).—*Feeding Bees.*—1. When a swarm is hived it should be fed for about a fortnight. A colony for wintering should be fed till they have about 30 lb. of stores. 2. There is no reason for their having more food. Better re-queen with one reared from the good-tempered lot, but be sure and see that no drones hatch from the vicious lot. 3. That covering honey is pure wax, while that covering brood is a mixture of wax and pollen, and rather brown and mealy-looking.

D. M. (Eversley).—*Judging Sections.*—It was a most reprehensible thing to do, and no judge who understands his work would deal with sections in this manner. That sections should be tasted is quite proper; but it is only necessary to open a cell or two at the side with the "Reid" honey-taster, which is designed for this special purpose.

J. S. (Midlothian).—*Name of Swarm.*—Yes; it is generally termed a virgin swarm.

Worker (Twyford). — *Examinations, &c.* — 1. Apply to the secretary of the B.B.K.A., 23, Bedford Street, Strand. 2. Yes; we would strongly advise you to become a member of the B.B.K.A. 3. It is a very bad sample, and made by the old dipping process, and not good even at that. You did quite right in returning.

T. H. (Medbourne).—*Immature Drones Cast Out.*—1. The bees have given up all idea of swarming, and are casting out the drones in order to save the food they would consume if allowed to hatch. Casting out of brood is also a sign that stores are running short. 2. Let the skep remain as it is until the honey is sealed over; it will then be ripe and can be used at once. 3. You can clear the skep by using the "Porter" bee-escape, but it will be quicker to drive the bees. We appreciate your kind remarks and good wishes for the Journal.

E. B. (Swansea).—*Bees Dying.*—We can only find one bee showing signs of bowel trouble. The others are quite empty. Try feeding on warm medicated syrup.

J. F. A. (Northam).—*Damaged Queen-cell.*—If it is only a slight indentation no harm will result, providing the cell was not jarred very much. If the dent is a large one and the cell has been jarred, then it will be best to destroy it.

Honey Samples.

D. C. (Darvel).—An excellent sample, mainly clover.

J. C. D. (Wrexham).—No. 1, principally from lime, good in density and flavour,

rather dull in colour. No. 2 is a medium honey, but is quite spoilt with smoke.

J. D. D. (Duires). — Both are splendid samples, and fit to show. No. 2 is slightly better in density.

E. S. L. (Northumberland).—An excellent sample; is very light, but has a slight heather flavour.

W. H. P. (Carlisle).—1. Consistency good. 2. Yes. 3. It should be worth 60s. per cwt.

R. M. W. B. (Bridge of Allan).—Bottle broken in transit, and all the honey had leaked away.

E. K. (Wrexham).—A very nice sample, good in colour, flavour, and density, and is quite fit to show.

J. P. (Bolton).—No. 1 is a very good honey, and is fit for show purposes. No. 2 is very unripe, and if bottled in its present condition will certainly ferment.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

July, 1910.

Rainfall, 3·22 in.
Above average, ·91 in.
Heaviest fall, ·65 in. on 24th.
Rain fell on 15 days.
Sunshine, 157·9 hours.
Below average, 76 hours.
Brightest day, 4th, 12·8 hours.
Sunless days, 1.
Maximum temperature, 70° on 15th.
Minimum temperature, 45° on 27th.
Minimum on grass, 41° on 13th and 27th.
Frosty nights, 0.
Mean maximum, 63.4.
Mean minimum, 51·8.
Mean temperature, 57·6.
Below average, 3·0.
Maximum barometer, 30·140 on 13th.
Minimum barometer, 29·465 on 25th.

L. B. BIRKETT.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

HEALTHY DRIVEN BEES, with young Queen, 5s. 6d.; old Queen, 5s.; Boxes, 1s., or returnable. Would exchange for honey ripener or tins without rust.—WELBOURN, Cranswick, Beverley. c 23

Special Prepaid Advertisements.—*Continued.*

NEW LIGHT CLOVER-SAINFOIN HONEY, £3 cwt. Sample 3d.—ANDREWS, Longthorpe, Peterborough. c 24

WANTED, 2,000 good light Sections; also good Extracted.—State price to DELL'S, Leigh, Lancs. c 26

BEES WANTED, in exchange for graphophone, 50 records.—Offers to DAVID JOHN, Mwyndy Cottage, near Llantrisant. c 27

TEN HIVES, STANDARD FRAMES, BEES, whole season's contents, 7-lb., no room.—T. NEWMAN, Bee Expert, Hazelbury Bryan. c 29

TO SELL IN ONE LOT.—Five Simmins's Double Conqueror Latest Pattern Hives, as new, with nine strong healthy Stocks of White Star Bees; Cowan's Geared Extractor, as new; Honey Ripener; "W.B.C." Uncapping Knives; and many spare Brood Frames, 30 Supers. Immediate offers, owner going abroad.—B., c/o "Bee Journal" Office. c 31

FINEST EXTRACTED ENGLISH HONEY WANTED, in bulk and 1-lb. screw-cap bottles. Send sample and lowest price. — FISHER, 106, Brook-green, London, W. c 32

GOOD STOCKS, in 10 Frame Hives, 1910 Queens, £1 each.—COOK, Worlington, Soham. c 33

GRAND STOCK, on 8 Frames, with any amount of natural stores, and 1910 Queen, fit to take to the moors, 22s. 6d.—W. KING, 14, Moy-road, Cardiff. c 34

WANTED, Good Sections, also Light Rur Honey.—R. CARTER, Chartridge, Chesham, Bucks. c 35

DRIVEN BEES.—Wanted, 30-40 lots, early delivery.—ADAM, Hill Crest, Elgin. c 36

WANTED, driven lot Black English Bees, 1910 Queen.—Price to D. VARTY, Etwall, Derby. c 37

WANTED, "W.B.C." Hives and healthy Black Bees (or Hives only), carriage paid, in exchange for No. 3 F.P. Kodak Camera, new condition, cost £3 12s. 6d.—HEARD, Orchard Hill, Bideford. c 39

WANTED, Sections, first quality. Good price given. Prompt cash.—CHILTON, Southdown Apiary, Polegate, Sussex. c 41

FOR SALE, 30 strong, healthy Stocks, in "W.B.C." and other hives, Cowan Extractor, Ripener, quantity Frames, Honey Tins, Foundation, &c., purchaser to remove; or exchange.—Particulars, W. WILKES, Castle Foregate, Shrewsbury. c 18

FOR CASH, or exchange for Honey, 1 Wells, complete, 12s.; 1 "W.B.C." Heather Hive, 6s.; 1 Taylor's Non-swarming "W.B.C.," 6s.; 1 "W.B.C.," 6s.; 1 Leary Hive, 12s., takes two stocks; several Cottager Hives, take ten frames, 4s. each; 12 Simmins' 16-frame Hives, zinc-covered roofs, 10s. each.—J. GRATTAN, Expert, 54, Herbert-road, Plumstead. c 13

FOUR NEW WELL-MADE "W.B.C." HIVES, painted white, 14s., or exchange for Driven Bees; also 12 good Skeps, 9d.—Particulars, T. ATKINS, Leire, Lutterworth. c 9

FOR SALE, 4 strong Stocks, in bar-frame hives, guaranteed healthy, 25s. each.—SHAW, Boreham Wood, Herts.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

Editorial, Notices, &c.

REVIEW.

Diseases of Bees. By Walter Malden, M.A., M.D., M.R.C.P., of the Pathological Laboratory, Cambridge University. This is a reprint from the *Journal of Economic Biology*, and is a summary and review of the recent investigations into diseases of bees. Dr. Malden divides these into two groups—(1) those affecting the larvæ and (2) those affecting the adult bees. In the first group he places foul brood of both forms known to us, and other diseases such as chilled brood, pickle brood, and black brood are casually alluded to. In the second division we have malignant dysentery, simple dysentery, May sickness, paralysis, and "Isle of Wight disease." As Dr. Malden has been specially at work on the investigation of this last disease, it is natural that he should deal fully with it. He tells us it is impossible to say how the complaint originated, but it has been noticed that it is most prevalent and spreads most rapidly in the early summer months, but no time of the year is exempt, many stocks perishing during the winter. In this disease only the adult bees are affected, the larvæ and young bees remain healthy, and drones rarely take the complaint. In nearly every case in which accurate observations have been made it has been found that the disease was introduced into a healthy hive by foragers who had entered infected hives for the purpose of robbing. After describing the organism which Dr. Malden has found associated with the disease, and which he has named *Bacillus pestiformis apis*, he says that during the last two years it has spread to the mainland, and has been noticed in Hants, Sussex, Surrey, Dorset, Berks, Bucks, Herts, and Essex; but there is some satisfaction in knowing that it does not appear to be quite so virulent as it was in the Isle of Wight, where every stock which existed before the outbreak had perished. Unfortunately, so far no means have been found to check the spread of the disease, and the only treatment recommended is to destroy the stock as soon as it is proved to be infected. It is also satisfactory to learn that the infection does not appear to remain long after the bees are dead, and some cases have been recorded in which a swarm was allowed to take possession of a hive soon after the stock previously inhabiting it had died of the disease, without the bees being affected. Dr. Malden says that since the disease has already spread not only to the counties which are near the Isle of Wight, but also to those more inland, there is little doubt that it will spread still further, and recommends that a careful watch be kept for the first appearance of the disease in an apiary, and to promptly destroy any stock which shows signs of infection. By this means alone will it be possible to prevent the disease from spreading to all parts of the country.

DEVON B.K.A.

ANNUAL SHOW.

The Devon Bee-keepers' Association held their twelfth annual exhibition of honey, &c., at Tiverton, on July 28, in conjunction with the Tiverton Agricultural Society.

The exhibits were of splendid quality, but owing to the adverse weather the honey-flow has not been good. This was noticeable in the comb honey, a prize of one guinea for the two best sections only attracting two entries.

In the class for confectionery were nine entries, all worthy of a prize, one of which was an excellent exhibit of honey toffee. During the afternoon Dr. Phillpotts and the hon. sec. gave a demonstration of honey-extracting, the rain preventing demonstrations being given in the bee-tent.

Dr. Phillpotts and E. E. Scholefield, Esq., judged the exhibits, and made the following awards:

Best Six 1-lb. Sections.—1st, W. E. Brooking, Marlborough, Kingsbridge; 2nd, W. F. Trineman, Saltash; 3rd, J. Salt, Saltash.

Shallow Frames.—1st, R. W. Furse, Woodbury; 2nd, G. Liverton, Cadeleigh.

Best Single Section.—1st, W. E. Brooking; 2nd, Miss Burr, Ebford, Topsham; 3rd, G. Liverton.

Six 1-lb. Bottles Light Honey.—1st, J. Salt; 2nd, W. F. Trineman; 3rd, J. Trineman, Lostwithiel; h.c., H. Patey, Chillington.

Six 1-lb. Bottles Medium-coloured Honey.—1st, C. Squire, Mortehoe; 2nd, W. F. Trineman.

Six 1-lb. Bottles Dark Honey.—1st, R. W. Furse.

Six 1-lb. Bottles Granulated Honey.—1st, C. Squire; 2nd, R. W. Furse.

Wax.—1st, J. Trineman; 2nd, C. Squire.

Observatory-hive.—1st, C. Low, Tiverton; 2nd, R. W. Furse.

Mead.—1st, W. Tucker, Bickington; 2nd, C. Lowe.

Natural History.—1st, R. W. Furse.

Confectionery.—1st, Miss Richards, Knightleys, Exeter; 2nd, G. W. Thoms, Ebford, Topsham; 3rd, Mrs. Thoms.

The silver medal was awarded to R. W. Furse, 13 points; the bronze medal to C. Squire, 8 points; the certificate to W. F. Trineman, 6 points.—R. W. Furse, Hon. Sec.

LEICESTERSHIRE AND RUTLAND B.K.A.

ANNUAL SHOW.

At the annual show held in connection with the Abbey Park Flower Show, at Leicester, on August 2 and 3, the attendance exceeded 32,000. The honey on view was of excellent quality, and the number of entries was about up to the average. The bees to be seen at work in the observatory-hives were very interesting, as evidenced by the large number of visitors who constantly thronged around the exhibits. This class was well represented, and its usefulness cannot be over-estimated when the instruction gained of the habits of the honey-bee are taken into consideration. The displays of honey on the centre table were also very attractive, and called for special mention. The light classes were well filled, and the general quality of the honey was excellent. Sections and comb honey were not numerous, but some nice specimens were staged. Mr. Brown, Somersham, Hunts, and Mr. W. W. Falkner, Market Harborough, officiated as judges. Lectures and practical demonstrations in bee-keeping were given at intervals in a special tent adjoining. These, as in years past, proved very attractive, and have been the means in many instances of inducing people to take up bee-keeping (if only as a hobby), thus benefiting the fruit-growing industry to a very large extent, by the action of natural fertilisation of the blossoms by the bees.

Observatory-hive of Bees.—1st, W. H. Fountain, Leicester; 2nd, J. Garratt, Willoughby Waterless; 3rd, S. Clark, Old Humberstone; 4th, W. H. Woods, Aylestone.

Best Twelve Sections of Comb Honey.—1st, J. Veasey, Wilbarston; 2nd, J. Fewkes, Frisby-on-the-Wreake; 3rd, Miss R. Dixon, Swithland.

Best Twelve Bottles of Light-coloured Honey (open to North Leicestershire).—1st, W. B. Tallent, Diseworth; 2nd, F. H. Hubbard, Leicester; 3rd, J. Fewkes; 4th, Mrs. Gilbert, Seagrave.

Best Twelve Bottles of Light-coloured Honey (open to South Leicestershire).—1st, J. Waterfield, Kibworth; 2nd, J. Kenney, Cosby; 3rd, H. Bradbury, Kirby Muxloe; 4th, G. Geary, Ratby.

Best Twelve Bottles of Dark-coloured Honey.—1st, J. Veasey; 2nd, E. Varty, Diseworth; 3rd, A. E. Biggs, Cropstone.

Best Three Shallow Frames of Comb Honey. 1st, F. H. Hubbard; 2nd, J. Waterfield; 3rd, A. E. Biggs.

Best Twelve Bottles of Granulated Honey.—2nd, S. Clark.

Display of Honey.—1st, J. Waterfield; 2nd, F. H. Hubbard.

Best Six Sections of Comb Honey (novices).—1st, J. Hunt, Botcheston; 2nd, H. Burditt, Desborough; h.c., Mrs. J. Garratt.

Best Six Bottles of Light Honey (novices).—1st, T. H. Wright, Coleorton; 2nd, W. Ward, Seagrave; 3rd, J. Hunt.

Honey Beverage.—1st, T. H. Geary, Enderby; 2nd, S. Clark.

Beeswax.—1st, E. Varty; 2nd, S. Clark.

AMONG THE BEES.

MAKING SPORT FOR THE PHILISTINES.

By D. M. Macdonald, Banff.

"A bee-keeper in Canada opposed to foul-brood legislation would be a curiosity. I know none." This was written the other day by one of the most prominent bee-keepers on the other side. In the States I cannot call to mind one single voice raised against legislation. Australian and New Zealand bee-keepers cry for legislative suppression; no bee-keeper opposes it. On the Continent opponents are unknown. In Ireland the same tale holds good. I have never yet heard a Scottish bee-keeper express one antagonistic word. How, then, does it happen that a few prominent Englishmen clamorously object to steps being taken to secure an Act for the suppression of bee-diseases. My opinion is that it arises from pure prejudice alone. This I will say: I have never yet, amid the mass of opposition verbiage written against legislation, found one single argument worth a moment's consideration or the waste of printer's ink to confute its fallacy. If, in every other country in the world where it has been tried, legislation has been found beneficial, why should it fail to produce good fruit in England? The calmly dispassionate and sensibly reasoned arguments of the late Mr. Harris, reproduced on page 226, are irrefutable, and should be taken to heart by all opponents of legislation, whose so-called arguments are so much sport for the Philistines.

An Ideal Location.—I am more than ever convinced that location has a very great deal to do with success—more indeed than is frequently accorded it. In the mind's eye I call up a nice, cosy, sheltered nook, well protected, especially from the north and east winds. The district is rich in early pollen sources, and there is an abundance of fruit bloom. At the very door of the hives almost is a vast stretch of white clover fields, all one mass of bloom, coloured one shade, as if it were a garden bed. Every blink of sunshine, in even the broken bee-weather we have been experiencing all summer long, is eagerly seized upon by the bees, and honey rolls in until the rainfall compels the diligent workers to desist temporarily.

Thus it goes on day after day, with an income keeping breeding well forward, yielding ample food supplies for the adults, and allowing a fair percentage for comb-building. When a good day comes, every grain of nectar is stored aloft, because the brood combs are full of eggs, larvæ, and honey. With the close of July came the limes, some thousands of which were in full bloom within a radius of a quarter to half a mile. Even on showery days these flowers, with their pendant blossoms, yield abundantly, allowing comfortable foraging even during the fall of fairly heavy rain, while their nearness to the hives costs very little in the way of bee wear and tear. In these glorious days of August the heather is within working reach of this apiary, and the hills and moors are one rich expanse of purple bloom. Verily the location is an ideal one.

Avoid Drone-comb.—This can in general be done in one of two ways. Give full sheets of foundation when hiving a swarm, or alternatively contract the number of frames to, say, six or seven. Last season was a poor one, so swarms took a long time to build out the full complement of frames, and their appearance now provides an interesting object-lesson. Practically, the first ten days bees build only worker-cells from either starters or half-sheets, during the second period of ten days they build a fair percentage of drone-comb, and during a third ten-day period this may increase to almost half and half. It follows therefore that an endeavour should be made to secure the completion of all combs being built from starters in the *first ten* days. If the flow is broken, intermittent, or a poor one, it pays to feed in order to accomplish this laudable purpose. When the comb-building drags on for a month or more, almost inevitably far too many drone-cells are constructed. Examining lately some last year's swarms forwarded then on half-sheets of foundation, it was discovered that while almost every cell in the upper half of the comb was worker size, the entire lower half consisted of pure drone-comb. Immediately after leaving the impressed base, the workers at once broke into transition cells, and then constructed large ones. It formed an unsightly comb, and—what is worse—it must prove a nuisance for all time by causing a very large and unnecessary rearing of useless consumers instead of remunerative worker-bees.

Colour of Wax.—I was once an interested listener at a show where a local bee-keeper, evidently of some standing amongst his fellows, was expounding to his auditors his ideas about the best colour for wax in general, and show-wax in particular. Apparently he had adopted a favourite shade of yellow as the one and only tint worthy of any consideration. It should be known that specimens of wax from different parts of the country will vary very considerably in hue and odour at least, if not in several other points. Thus a wax obtained from (*a*) fruit bloom, (*b*) pure clover flowers, and (*c*) heather will not only differ in colour but also in aroma. Then, most undoubtedly, the species of pollen being gathered at the time the comb was under construction will affect the wax-cake. The vessel in which the comb is rendered, the water used in melting, and the amount of heat and length of time taken to carry out the process will all tell in producing different shades. In some cases the aroma is evaporated, while in others the texture of the cake is impaired. All of these points have to receive due consideration in determining the relative value of two or more cakes of wax side by side. While colour is the chief determining asset, a high or fancy colour would at once raise suspicion, and possibly kick the beam down on the wrong side as far as that specimen was concerned.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FOUL-BROOD LEGISLATION.

[7884.] In "Notes by the Way" (7874, page 305) Mr. Woodley writes mainly on foul-brood legislation, and one of his questions I desire to answer; the others are sufficiently noticed by the Editor in his foot-note. Mr. Woodley says: "If Mr. Avery can reduce the disease to the small dimensions of 5 per cent. by county B.K.A. work, why worry for an Act?"

In reply to this, I must again repeat that if all counties would do as Cumberland has done there would be small need for legislation. The pity is that they won't do it voluntarily, and it seems to me futile to keep pushing forward this little "if" as an argument against legislation. "If" all mankind would go forward on the difficult path of duty towards their neighbours and themselves there would be no need of the whip of the law to guide them. The fact that we have so reduced the disease in one county is an argument not against legislation, but in its favour, for it shows that it can be overcome, and as several counties are working hard to stamp it out, we claim

to have earned the right to seek for protection and aid in controlling a filthy disease which perhaps our neighbours are helping, not always in ignorance, to perpetuate. I have also to say here that this reduction in the cases of disease has been brought about by the work of experts—men who are members of that honourable profession which is sometimes held up to unjust ridicule by certain writers in the B.B.J. and elsewhere. They are the persons who would become inspectors, and whose labours, I am well convinced, would not tend to "restrict the utility of the honey-bee in the economy of Nature." They would be welcome in the county where the above reduction of diseases has been accomplished.

Will Mr. Woodley aid the efforts being made to stamp out foul brood by using his power to wield the pen in setting forth in the B.B.J. and elsewhere the desirability of voluntary action, backed up by a true picture of the ability of experts to cope with the bee-man's arch-enemy, and to advise the afflicted to seek their aid?

This would be one step forward towards inducing some other counties to reduce the disease.

The last paragraph in "Notes" is an indictment of a Foul-Brood Bill, because the effect which Mr. Woodley predicts its adoption will have on bee-keeping is happening now. How can a prospective Foul Brood Bill be blamed for the present decay of the industry? Would it not rather put new life and vigour into the craft now dying out in districts where no organised effort is made to deliver it from the curse of foul brood?

Wake up, bee-keepers and show that we are ready to accept the aid of the law without which it is impossible to stamp out foul brood.—G. W. Avery, Heads Nook.

SWARM VAGARIES.

[7885.] On reading the B.B.J. of July 28 I saw a report of the singular behaviour of a swarm. Perhaps it would interest the readers of the B.B.J. to learn of the singular behaviour of a swarm I had to deal with. I have a colony of six hives, and the swarm I refer to came over in the garden and swarmed in the potatoes—of course, a very easy matter to hive. Well, I got the skep and placed over them, and they all went up. About two hours after I went to see if they were all right. I found they had all gone. Upon searching the garden I found them clustered on a plum tree; so I got the skep again, shook them in, letting them stay in it till evening, and then hived them, and they went up well. Next morning I was close to the hive. Out they came again, so I watched them, and finally, being about ten minutes in the air, they settled on an apple tree; so I got the skep, shook them in, after well spraying them with syringe before doing so, and hived them again. I stood looking at them a few minutes to see if they were all right, and everything seemed well, but I had not gone from the hive more than half an hour before they came out again and swarmed on a currant tree. I went through the same performance as before. This time I got a frame of brood and honey out of another hive. They have now remained, and appear to be going on all right. I gave them five frames of foundation—one with the brood—and upon looking under the quilts I see they cover four frames—not a very big lot, but before they came into my garden I hear they had swarmed in a neighbour's on some potatoes about 200 yards away. I should be glad to have some explanation as to their behaviour. Trusting I have not encroached on too much valuable space in your paper. —J. H., Seaford.

[As stated before, it is often difficult to say why bees behave in a certain peculiar manner. Want of ventilation or a young queen might be the cause. Casts very often behave in this manner, having a virgin queen with them. You did the right thing in putting in a frame of brood; this is generally effectual.—Ed.]

LIMNANTHES DOUGLASII FOR BEES.

[7886.] *Limnanthes Douglasii* (7880, page 317), I consider is valuable for bees, for under suitable weather influences it secretes an abundance of nectar, as anyone may see with the naked eye. If Mr. Burbridge on a suitable day will take up a flower he may see at the base of each petal in the corolla every nectary overflowing.

On a patch of two square yards I have seen forty or fifty bees at a time busy rifling the flowers of their contents, and this is a very large number for the area, as I do not think one would ever find so many on the same area in a clover field.

That a good patch in early spring is helpful to the bees is to my mind without doubt, but of course if the whole garden were full of it, it would be of no avail for surplus, and I am very much afraid—although I have not proved it—that it would be unsuitable for a section or surplus comb.

I can only surmise that in Mr. Burbridge's case and in that of his lady friend there is abundant supply in some other flower growing at the same time, for I have observed that bees will ignore the flowers in one's garden for any better source.

I would mention that seed of *L. Douglasii* should be sown in the autumn to be available for bees in early spring, as evidently Mr. Burbridge's was, to be in bloom in April.—GEO. HAYES, Beeston, Notts.

[7887.] My experience has been exactly the opposite to that of your correspondent (7880, page 317). About two years ago I paid a visit to Cardiff, and in the garden of a friend there was a bed composed of nothing else but *Limnanthes*, covered with bloom, and a bee in almost every flower. He sent me some seeds, which I planted in the spring of 1909. These flowered late in the summer, and in the autumn a fine crop sprang up from the seeds which fell. The plants stood the winter well, and this spring I had a border 30 yds. long by 1 ft. wide, covered with bloom, and on fine warm days there were scarcely enough blooms for the number of bees which flocked to them. They bloomed from the beginning of May until the beginning of July. This year I have removed the old plants, dug and manured the ground and replanted the seeds, and I hope to have a good show of bloom again next year. I am not sure, but I think the bees obtain more nectar than pollen from the flower—they certainly get something, or they would not work it as they do.—J. L. BRIERLEY, Worcester.

DEAD BEES UNDER LIME-TREE.

[7888.] I remember seeing an account in the B.B.J., some time ago, of bees being dead under white lime-trees, but I cannot come across it now. On July 31 and on August 1 under any lime-tree about here there were dozens of dead and dying humble bees, but no hive-bees, nor have I noticed any dead since that date, although there is a constant hum in the trees from bees of some description, apparently some of them being humble bees. This seems to be evidence that the plant theory of the "Isle of Wight" bee-disease (7852, page 265) possibly may be correct, for if there are trees that cause such calamity amongst bees of any description, is it not probable that some vegetation is responsible for the "Isle of Wight" disease?—A. HARRISON, Masongill, Kirkby Lonsdale.

EFFECTS OF STINGS.

[7889.] On page 317 of the B.B.J. "A. F. L." writes that a bee-sting "powerfully influences the motor centre." Does that mean the sense of movement? In June, 1909, I had a sting in the cheek, the swelling went down in three to four days. Six days after the sting I suddenly lost control of motion, and was quite unable to walk for four weeks. Since then I have got gradually better and can now walk about three miles an hour. The doctors have been quite unable to find a cause for my weakness; could it be due to the bee-sting?—EDWIN J. WALKER.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1910, was £5,704.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Queries and Replies.

[4036.] *Bee Nomenclature.*—Will you be good enough to name the species of the bee enclosed, informing me what is the average size of its colony, whether it is capable of domestication, and, if so, whether this is worth while and how performed? I would like also to know as much of its habits, honey-gathering powers, hibernating methods, comb architecture, metamorphoses, &c., as you can find space for. The nest is in a shed, under a heavy stone slab, with an exit tunnelled under the earth for a distance of about half a yard. On raising the slab there is disclosed a compact cellular formation of a material thicker and much darker than ordinary beeswax, circular in shape, about 10 in. in diameter, the cells larger than ordinary drone-cells, all apparently vertical and on a level with the ground beneath the slab. What has become of the displaced earth? Does this species sting; if so, readily or otherwise? —HAROLD READER, Didsbury.

REPLY.—The bee sent is *Bombus pratorum*, one of the sixteen species of humble-bee that inhabit Britain. Like the social wasps, the humble-bees live in colonies only in summer; in autumn the colony perishes, and the young queens hibernate solitarily in the ground or in moss. In spring the queen establishes her home in a deserted mouse's nest, and here she rears a brood of workers numbering from about fifty to 300, according to the species and circumstances. The drones and queens are produced afterwards. The workers take about three weeks to develop from the time that the egg is laid, passing through the stages of larva and pupa like the honey-bee, but the eggs are laid in specially-constructed cells of soft wax, each cell containing about four to ten eggs. The larvæ are fed by the queen and workers with honey mixed with pollen through holes made temporarily in the wax covering; as they grow wax is added, and so they are kept

covered. When the larvæ are full fed each one spins an oval cocoon of pale yellow, tough, papery silk for itself, and the bees clear away the wax. The queens and drones develop in the same way, but the queen-larvæ receive a larger amount of food. A little honey is stored each day in the cocoons from which the bees have emerged, and also in cells constructed of a soft, dark-coloured wax, but most of it is consumed during the night. *B. pratorum* is common throughout the country, and is a particularly hardy species, the first workers appearing about the middle of May—earlier than those of any other species. Your nest is evidently a thriving one and at about the height of prosperity. The earth was displaced by the mouse that made the nest. The workers and queens of the humble-bees can inflict a painful sting. When the nest is opened they will lie on their backs with their legs outstretched ready to seize and sting the intruder, but only one of the British species (*B. terrestris*) will readily fly to attack. The colony can be transferred to a box, and its working watched through a glass lid.

[4037.] *Keeping Queens.*—Would you kindly tell me how I can keep fertile queens when received by post until wanted, without making nuclei? Having foul brood, I wish to try de-queening and keeping stocks without queen for three weeks. I have ordered four queens and should like to make sure of one before trying the other three. Would it do to cage each queen separately on a comb in a stock? I should have thought it would have been safe to keep them in the travelling-cage, but a dealer told me a short time ago, after having a queen from him, that she might not live more than two days in the cage, and ought to be introduced at once. This is a terrible district for foul brood; every bee-keeper that I have met has it. I am trying several means of getting rid of it. The first stock which had it I cured by the McEvoy treatment in the middle of June, but this stock has not, of course, given me an ounce of honey, and what is there to prevent it again contracting the disease before winter? Can you tell me where I can obtain the seed of *Melilotus alba* at a reasonable price? Messrs. Sutton and Sons quoted me 2s. 6d. per lb., which I think exorbitant—much too expensive to use on a large scale.—B. B., Ramsgate.

Reply.—You can keep the queens if you make a nursery frame, and keep this in a strong colony. It is better to keep them in nuclei, which can then be united to the colony you wish to re-queen. Why not order the queens to arrive at the time you wish to introduce them? Any dealer will undertake to do this.

[4038.] *Storifying for Surplus.*—I had one colony particularly strong in the early spring on ten frames, to which, when these were filled with brood, I gave another ten standard frames for breeding. Later I gave them a shallow super, and the queen went through the excluder to the third story and laid eggs there. After half filling the top shallow super with eggs, she apparently did not go up again, and when I examined the second story last week I found there only a little hatching brood in the centre, while all the rest was stored with honey. It occurred to me, seeing that excluder-zinc must be, to a certain extent at any rate, a honey-excluder, whether it would not be a good plan to allow the queen free access to the shallow supers above, continually giving room above in advance of requirements, trusting that she would go down lower and lower as the season advanced, while the enormous population would fill in behind her as the young bees hatched out. I was thinking of trying this next year with one or two lots, using only shallow supers fitted with worker-comb; but before doing so I should like to know what objections, if any, there are to the plan. I may say that, while my other stocks on ten frames will probably complete about one shallow super and a half each, the stock in question has filled a standard body-box, a shallow super, and will possibly do a little more.—F. V. W., Glos.

Reply.—The plan you propose is somewhat similar to that recommended on page 62 of "Guide Book." In this way we have worked three, and even four, standard frame-hives one upon the top of the other. Where extracted honey is required, and one is not particular as to its appearance, it answers admirably, and certainly it produces a much larger yield. The objection, however, is the breeding in combs used for storing surplus, as the honey is likely to be clouded and more or less contaminated by the impurities left in the cells. The best quality of honey can only be obtained from pure combs that have not contained brood.

[4039.] *Bees Dead in Hive—Transferring from Skep to Frame-hive.*—1. On opening one of my hives I found about twenty dead bees on the top of the quilts, and on looking down at the sides and back of brood-chamber saw the floor-space was strewn with dead bees. I am enclosing four of the latter, and shall be glad if you can give me a reason for this dying off. The stock appears to be working well and is strong, filling frames and two racks of sections. I might add that on examining quilts I found one small wax-moth grub only. 2. A few weeks ago I had a swarm from another stock which I put in a skep until a hive

came from the county expert. On receiving the hive I put the skep on top of brood-frames as recommended by the maker, but, although the bees go out of the hive entrance, they still keep in the skep. I put two frames from another hive in as an inducement when the skep was put on. I shall be glad if you will also tell me what I had better do in the circumstances.—E. B.

Reply.—1. The cause of death is starvation. Either you were not careful enough in putting on quilts, or else the supers do not fit properly, leaving a small hole somewhere at which the bees get out one at a time; not being able to find their way back on account of the opening being so small, they have perished. 2. You can hardly expect a swarm to fill a skep and also work down on to brood-frames in such an unfavourable season as this. That method is given for dealing with established stocks in skeps in the early spring. You should have taken out what little comb the bees had built in skep and hived them into frame-hive in the usual manner from the front. You had better put the skep on a floor-board and allow it to stand until the spring, when it can be worked down.

[4040.] *Apparently Healthy Brood Dead in Cells.*—I should be very glad if you could diagnose complaint in enclosed specimen of brood-comb. Several of my hives, while having large areas of healthy brood, have patches where the bees are as in enclosed specimen. One hive in this condition lost its queen, but it was successfully re-queened. The new brood, however, shows the same tendency. The hives are clean—most of them new—and they have been well protected. They have, however, suffered from wax-moth, and some bees have been lost through the grub working through the comb and disturbing the insects while in the transition state. Still, this will not account for the patches of dead bees which are to be found in the hives. A reply in the B.B.J. will be esteemed a great favour, and a suggested remedy would be eagerly tried. I might add that the season has been a very bad one here, although the district is one of the most prolific in honey-bearing flowers in England. Thousands of acres of plants are grown for seeds, yet, in spite of this fact, with eleven stocks I have not secured 50 lb. of honey. Do you think that the disease is the cause? I am inclined to blame the stocks rather than the season.—Essex, Coggeshall.

Reply.—This is a peculiarity sometimes found in hives, and may be from one of two causes. We have very often found it after a severe thunderstorm, or it may be caused through naphthaline being used a little too freely in the hive. The bees are not dead, as you suppose, and although never sealed they emerge from the cells all right at the proper time. No doubt it is the adverse season and not the bees that accounts for your non-success.

[4041.] *Infected Combs.*—1. Will you please tell me through the B.B.J. what is the matter with comb sent? If diseased, what would you advise me to do? 2. Can combs and empty sections from a hive affected with sour brood be used on a healthy stock without being affected? Hoping you will try to give me an early reply in your valuable paper.—M. A. S., Pontypool.

Reply.—1. The comb contains sour brood, with a very slight trace of foul brood. Treat as per instructions given in "Guide Book." 2. It is unwise to put supers that have been on diseased stocks on healthy ones without first disinfecting them. This can be done with formalin.

Bee-Shows to Come.

August 20, at Elworth, Sandbach.—In connection with the Elworth Athletic Club and Horticultural Society's Show. Class for Honey open to the County of Chester, 15s. first, 7s. 6d. second, 5s. third, for 12 Jars Run or Extracted Honey; also Bronze Medal given by the Cheshire Bee-keepers' Association. **Entries closed.**

August 24 and 25, at Leamington.—Annual Show of the Warwicks B.K.A., in connection with the Warwickshire Agricultural Society's Exhibition. Section for Honey, Appliances, &c. Schedules from J. Noble-Bower, Knowle, Warwicks.

August 27, at Kettering.—In connection with the Wellington-street Working Men's Horticultural Society. Class for Honey (open): One 1-lb. jar of honey, to be sold, proceeds to be given to the Convalescent Home. First prize, 7s. 6d.; second, 4s. Entries free. Schedules from Hon. Sec., W. Heritage, 114, King-street. **Entries close August 25.**

August 30, at Cartmel, Lancs. — Bee and Honey Show, in connection with the Cartmel Agricultural Society's 38th Annual Show. Open Classes. Schedules from J. N. Parker, Cartmel, near Carnforth. **Entries close August 18.**

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 20.**

August 31, at Chester.—Annual Show of C.B.K.A., in conjunction with Cheshire Agricultural Society. Liberal prizes for Hives, Bottles, and Sections. Schedules from Mr. T. A. Beckett, St. Werburgh's-chambers, Chester. **Entries close August 22.**

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 14 and 15, at Cambridge.—Honey Show, in connection with the Cambridge and District Red Cross Horticultural Society. Four open classes. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, 52, Bridge-street, Cambridge. **Entries close September 10.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

*** NOTICE.—George Kennedy, bee-keeper, of Odell, Beds, wishes to call the attention of bee-keepers and others to the fact that he is in no way connected with the person of same name charged with forgery at the North Lodon police-court, and referred to in several newspapers.

BEE-KEEPER (Sussex).—*Age of Queen.*—We should say it is a 1909 queen.

QUINTON (Bearwood).—*Bee Cast Out.*—1. The bee you send is a drone, and it is evident that the bees are now casting out their drones, as the season is practically at an end. 2. If your bees have not worked in sections the colony was evidently not strong enough. You can take off the sections and feed your bees, so that they can build out the remaining frames.

S. P. S. (Rochford).—*Parasite on Fly.*—The parasite you send is called *Chelifer canevoides*, which is often found hanging on to the legs of flies and *tipulæ*. It belongs to the order of Arachnida, allied to the spiders, scorpions, mites, &c. They are occassionally found on bees, but as their food consists of mites and other small insect-like animals they do not inflict damage on bees, but may cause them annoyance. The creature has eight legs, besides a pair of crab-like claws.

W. J. (Neath).—*Keeping Fertile Queen in Travelling Cage.*—Some two to three weeks, or even longer, if properly provided for.

AN OLD READER (South Devon).—*Syrup from Last Year.*—If the syrup has been kept in properly-corked bottles and is in good condition you can certainly give it safely to the bees.

E. B. (Birmingham).—*Bees Dying in Hive.*—1. You had better examine the hive and see if there are sufficient stores and proper ventilation, and, should the bees require it, give them syrup. 2. You must not expect a swarm of this year to go down into frame-hive, for it is as much as they could do to fill the skep without going down.

J. H. T. (Cornwall).—*Utilising Condemned Bees.*—1. You will have to drive the bees from the skeps into an empty skep. 2. Three or four lots can be united, and the bees would settle which queen they would prefer, or you can remove all but one, as the bees are driven. You would have to give them 20 lb. to 30 lb. of syrup, recipes for which you will find in "Guide Book," page 197. 4. As soon as possible now.

A BEGINNER (London).—*Beginning with Driven Bees.*—1. If you have drawn-out frames it would be an advantage if you hived the driven bees on them, but, failing these, give foundation. 2. Yes, the bees would draw them out if fed liberally (see page 152 of "Guide Book").

J. R. (Rockcliffe).—*Hives near High Road.*—1. There is no regulation as to how far bees should be kept from a high road, but the bee-keeper would be responsible for any damage caused by their too near proximity to it. 2. You can insure against damage arising from injury done by bees. The insurance is 1d. per hive, with a minimum premium of 9d. Apply for printed particulars to Mr. W. Herrod, Secretary B.B.K.A., 23, Bedford Street, Strand, London.

E. E. H. (Chadwell Heath).—*Name of Plant.*—*Teucrium scorodonia* or wood sage.

L. H. B. (Beeston).—*Dead Queen.*—The queen is quite dried up, but appears to be an old one, and was probably a fertile one.

G. W. K. (Odell).—*Name of Plant.*—*Senecio Jacobæa* or ragwort.

W. D. G. (Briton Ferry).—Queen is an old fertile one.

HONEY-BEE (Ayrshire).—You should send a piece of comb containing the brood. The larva was too dry and shrivelled for us to be able to say anything about it.

WESTAWAY (Whitchurch).—*Getting Bees into Supers.*—The honey season is now over; therefore the bees will not gather surplus. The stocks were evidently so weak in the spring that they did not gain strength enough to go into supers.

A BEE (Watling Street).—*Dead Queen.*—The queen is an immature pure Italian.

F. H. (Wilts).—*Value of Books.*—John Keys, "The Ancient Bee-master," 1796, 2s. 6d.; R. Huish, "A Treatise on Bees," 1817, 3s.; Thomas Nutt, "Humanity to Honey-bees," 1845, 2s.

J. E. (Forest-Fach).—*Protective Label.*—Many associations do provide their members with labels to go over the screw caps so that if they are broken it shows that the jars have been tampered with. There would be no objection to the labels being more substantial, except the difficulty of getting them to adhere properly.

UNECA (Maldon).—*Two Queens in Hive.*—

1. It is quite possible to keep two queens in a hive under certain conditions. The excluder should extend to the floor and beyond entrance so as to divide this in two. 2. Certainly, if given in quantity, such syrup would be stored in the sections. We therefore do not approve of or recommend such feeders being used. 3. During an abundant flow of nectar a strong stock of bees sometimes gets rid of foul brood without the help of the bee-keeper.

H. G. B. (Frome).—*Obtaining Certificates.*—1. If you will write to the secretary of the B.B.K.A., Mr. W. Herrod, 23, Bedford Street, Strand, London, he will send you full printed particulars of the requirements for passing examinations for certificates. 2. The possession of a certificate is of commercial value, seeing that experts appointed by associations and county councils are expected to have them. Many of those holding them have good appointments not only here but in the colonies. 3. You might probably arrange for instruction in your neighbourhood, and if you were to become a member of the Somersetshire B.K.A., the secretary, Mr. L. E. Snelgrove, Rockville, Albert Quadrant, Weston-super-Mare, would send you particulars.

A. F. L. (Chatham).—*Fertilisation of Queen.*—If you found sealed worker and drone brood twenty-eight days after imprisoning queen it would suggest the possibility of there being another fertile queen, but it is no evidence that she had not made a mating flight.

Suspected Combs.

Wondering (Andover).—The comb contains sour brood. When a colony gets weak and has a very prolific queen, she often deposits more than one egg in a cell.

A. W. (Kent).—Slight foul brood in comb sent. It would be better to treat them on the starvation plan.

A. McQ (Hanley).—It is a very bad case of foul brood, and you did quite right in destroying. Disinfect the hive by scorching with a painter's spirit-lamp before using again.

R. B. (Tyrone).—Comb contains nothing worse than chilled brood.

Enquirer (Birmingham).—The brood in comb sent is perfectly healthy.

F. W. J. A. (Barry).—Comb contains nothing worse than chilled brood.

Honey Samples.

J. T. (Cumberland).—The honey is excellent in every respect.

T. E. (Northwood).—Good in consistency, colour, and brightness; rather strong flavour; principally from lime.

May (Atherstone).—The honey is granulating, hence its dull appearance. It is slightly acid in taste. It is doubtful if it would win on the show-bench. Early granulation this year is caused by nectar from charlock.

F. E. H. (Woodhouse).—Rather thin, good colour, flavour is not all that could be desired.

R. W. (Hutton Cranswick).—No. 1 is a very good sample, chiefly from clover, and fit to exhibit. No. 2 is a better sample, being much more dense than No. 1; it should stand a very good chance of winning on the show-bench.

J. A. H. (Redcar).—The honey is fermenting badly, and blew the cap off the jar when we tried to open it. It is quite unsaleable, but can be used for food if well boiled and mixed with half its bulk of cane-sugar syrup.

C. J. (Chester-le-Street).—No. 1 is very thin, dull in colour, flavour fair, mainly from lime. No. 2 is a good clover honey, its chief failure being density.

D. L. S. (Bucks).—A good sample of sainfoin honey.

S. H. G. (Disley).—From mixed sources.

E. V. (Diseworth).—No. 2 is the most suitable for your purpose.

Special Prepaid Advertisements.—*Continued.*

HEALTHY DRIVEN BEES FOR SALE, 2s. 6d. per lot, box with order.—WHITE, Fairstead Hall, Witham, Essex. c 44

FOR SALE, 7 Stocks Bees and Hives, owner dead.—LAKE, Luffenham, Stamford. c 61

WANTED, Sections, good quality. State price per dozen, carriage paid (unglazed).—F. J. MILAM, Finchampstead, Wokingham, Berks. c 60

SEVERAL NEW "W.B.C." HIVES, painted, 12s. 6d. each. Will exchange for Driven Bees or Honey.—WILLETT, JUN., Bee-keeper, Malden, Surrey. c 59

CHANCE OF LIFETIME.—Strong Doubling Box, with 12 Standard Frame, clean Comb, 9s.; Nuclei Hive, 12 Shallow Frames, clean Comb, 6s.; "Conqueror" Hive, almost new, 17s. 6d.; Abbott's Hives, from 7s. 6d. each.—BAKER, Edenholme, Longlevens, Gloucester. c 58

FINEST LIGHT HONEY, in 28-lb. tins, 70s. cwt. Samples, 3d.—WAIN, Thorpe Bank, Wainfleet. c 56

WANTED, Situation a head or single handed gardener, Yorkshire preferred, by practical and experienced gardener, age 36; excellent references and with good knowledge of bee-keeping.—BRADFORD, "Bee Journal." c 55

FOR SALE, several cwt. good Light-coloured Honey, and 10 dozen Sections. Sample, 3d. —DAVID HANCOX, Deddington, Oxon. c 55a

SEVERAL DOZEN LIGHT SECTIONS, at 9s. 6d. dozen, packed, and on rail free.—A. JENSEN, Kingston, Hornchurch. c 53

HONEY, English Extracted and Sections, wanted for cash. Send sample and price.—W. H. SIMS, Hall Green, Birmingham. c 52

LIGHT CLOVER HONEY WANTED, any quantity, prompt cash.—YORKS, c/o "Bee Journal." c 50

SPLENDID OFFER.—3 grand Stocks of Bees and all appliances, £1 each; delivery end August.—LINDSAY, Middleton, Kirkby Lonsdale. c 48

WANTED, 3-speed gear Bicycle, perfect condition. Exchange for Hives of Bees.—36, St. John's-road, Sparkhill, Birmingham. c 46

50 LB. TIN CLOVER-SAINFOIN, 6½d. lb., fine; sample, 2d.; geared Extractor, used twice, 25s. Exchange Driven Bees.—NEWMAN, 117, Coldharbour-lane, S.E. c 66

HEALTHY DRIVEN BEES, with young Queen, 5s. 6d.; old Queen, 5s.; Boxes, 1s., or returnable. Would exchange for honey ripener or tins without rust.—WELBOURN, Cranswick, Beverley. c 23

WANTED, 2,000 good light Sections; also good Extracted.—State price to DELL'S, Leigh, Lancs. c 26

BEES WANTED, in exchange for graphophone, 50 records.—Offers to DAVID JOHN, Mwyndy Cottage, near Llantrisant. c 27

WANTED, Good Sections, also Light Run Honey.—R. CARTER, Chartridge, Chesham, Bucks. c 35

WANTED, Sections, first quality. Good price given. Prompt cash.—CHILTON, Southdown Apiary, Polegate, Sussex. c 41

FOR SALE, 30 strong, healthy Stocks, in "W.B.C." and other hives, Cowan Extractor, Ripener, quantity Frames, Honey Tins, Foundation, &c., purchaser to remove; or exchange.—Particulars, W. WILKES, Castle Foregate, Shrewsbury. c 18

Special Prepaid Advertisements.—*Continued.*

DRIVEN BEES.—Wanted, 30-40 lots, early delivery.—ADAM, Hill Crest, Elgin. c 36

FOR CASH, or exchange for Honey, 1 Wells, complete, 12s.; 1 "W.B.C." Heather Hive, 6s.; 1 Taylor's Non-swarming "W.B.C.," 6s.; 1 "W.B.C.," 6s.; 1 Leary Hive, 12s., takes two stocks; several Cottager Hives, take ten frames, 4s. each; 12 Simmins' 16-frame Hives, zinc-covered roofs, 10s. each.—J. GRATTAN, Expert, 54, Herbert-road, Plumstead. c 13

FOUR NEW WELL-MADE "W.B.C." HIVES, painted white, 14s., or exchange for Driven Bees; also 12 good Skeps, 9d.—Particulars, T. ATKINS, Leire, Lutterworth. c 9

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture postcards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

BUSINESS ANNOUNCEMENTS.

DRIVEN BEES, healthy, 1s. 6d. per lb., or 4s. 6d. per lot, with Queen; Queens, 2s.; boxes returnable.—BISHOP, Expert, Pickersleigh Apiary, Malvern. c 45

EXTRACTORS.—Send for lists.—ADAMS, Dunton, Biggleswade. c 47

WANTED, Known, 1s. 4d. per lb. given for pure Beeswax, 1s. 6d. if value taken in goods; paid to Wormit.—STEELE AND BRODIE, Bee Goods Manufacturers, Wormit. c 49

200 LOTS WARRANTED HEALTHY BEES, 5s. and 3s. 6d. per lot, with Queens.—DENNETT, Whitchurch, Hants. c 54

GOOD STOCKS, plenty of Stores, on 8 frames, 18s.; also several dozen drawn-out Section Comb.—MATTHEWS, Great Rollright, Oxon. c 57

MESSRS. STONE AND SON, Chemists, Exeter, are buyers of English Bees-wax, in large or small quantities.—Write, stating quantity and price required. t 40

PREPARATION OF HONEY AND WAX FOR SHOW BENCH, 7d.—JOSEPH TINSLEY, Stone, Staffs. c 23

WANTED, Swarms, Stocks. Queens for sale, 2s.—KEATLEY, Four Oaks, Birmingham. c 65

150 LOTS OF HEALTHY DRIVEN BEES, with fertile Queens, 5s.; ditto, with 1910 tested Queens, 6s.; Queens only, in self-introducing cage, 2s. 9d. Orders in rotation.—SOLE, Expert, Whitchurch, Hants. c 67

HEALTHY DRIVEN BEES, with Queen, 5s. lot, packages free; Fertile Queen, post free, 2s. 2d.—ROLLINS, Stourbridge. c 30

HEALTHY DRIVEN BEES, with Queen, 5s. per lot, boxes returnable; spare Queens, 2s. 6d. each.—MORETON, 2nd Class Expert, Hallow, Worcester. c 8

3000 PURE FERTILE 1910 QUEENS TO BE SOLD DURING SEASON. Blacks, Carniolans, Italians, 3s. 6d.: Americans, 4s. 6d.; Swiss, 5s.; Virgius, 1s. 6d.—VOGT, 38, Clementina-road, Leyton. b 74

Editorial, Notices, &c.

REVIEWS.

Studien über die Honigbiene (*Apis mellifica*). By Prof. Dr. Enoch Zander (published by W. Engelmann, Leipzig. Parts 1 and 2). This is a reprint from *Zeitschrift für wissenschaftliche Zoologie* of the author's studies of the honey-bee, and is a valuable addition to our knowledge of its anatomy. Part 1 treats of the articulation and structure of the outer skeleton of the bee, and Part 2 is devoted to the structure and mechanism of the flying apparatus. Dr. Zander describes minutely the transformation that takes place from the larva to the perfect insect, and shows how the various segments of the body are evolved from previously existing parts. After reviewing what has been written by Marey, Amans, and others, Dr. Zander describes his own researches on the movement of the wings, the different positions of which he illustrates by photographs very much enlarged. The mechanism of the wings is given in great detail and the method of their movements is fully explained. The author found that pressure on the thorax would move the wings in a vertical or a horizontal direction, and concludes that the motions are entirely controlled by the muscles. He says that all the parts of the flying apparatus are so wonderfully connected with each other that the muscle can produce either a vertical or horizontal movement, although it has only one attachment to the root of the wing.

Cuidados del Colmenar. By Eduardo Bertrand. Translated by M. Pons Fábregues (Barcelona: Published by Gustova Gili. Price 4 pesetas = 1s. 4d.).—We have been often asked to recommend a Spanish bee-book, but the "Guide Book," which was translated into Spanish in 1888, has long since been out of print, and there has been no similar work to take its place. We are therefore pleased to welcome this translation of M. Bertrand's well-known *Conduite du Rucher*, which has been made from the tenth edition, and is consequently quite up to date, and should be of considerable service to bee-keepers in Spain.

WORCESTERSHIRE B.K.A.

The annual show of the above association was held in connection with the Worcestershire Agricultural Society's show on August 4 at Madresfield, Malvern. The number of entries was up to the average, and some very good exhibits were staged, there being about 3 cwt. of honey, the quality of which was all that could be desired.

Mr. Herrod acted as judge, and also gave lectures and demonstrations in the bee-tent, which were much appreciated. The awards are as follow:—

Display of Bee-products (*Honey, Wax, Mead, Vinegar, &c.*).—1st, J. Toombs; 2nd, G. Richings.

Twelve 1-*lb. Sections*.—1st, J. Toombs; 2nd, A. Firkins; 3rd, H. W. Taylor.

Six 1-*lb. Sections*.—1st, Miss G. Willan; 2nd, A. Firkins; 3rd, G. Cook.

Twelve 1-*lb. Jars Extracted Honey*.—1st, J. Price; 2nd, A. R. Moreton; 3rd, E. Corbett.

Six 1-*lb. Jars Extracted Honey* (open only to members who had never won a prize).—3rd, H. King.

Six 1-*lb. Jars Extracted Honey, Granulated*.—1st, J. Price.

Shallow Frames.—1st, J. Toombs; 2nd, H. King; 3rd, E. A. Millward.

Beeswax.—1st, J. Price; 2nd, G. Richings; 3rd, E. A. Millward.—George Richings, Assistant Secretary.

SURREY B.K.A.

ANNUAL SHOW.

The annual exhibition of honey, wax, hives, appliances, &c., was held in connection with the Guildford and West Surrey Agricultural Association Show in Stoke Park, Guildford, on Wednesday, August 3. Unfortunately it has been a bad year in the county for honey. The nights have been cold, and there has been a great deal too much rain in the day, and the bees, not being able to fly, have practically consumed all the honey they have gathered. This has been the case in the South of England, though in the North somewhat better times have been experienced. Having regard to the circumstances, the show must be considered a successful one, there being over 120 entries, and the honey shown, though some of the shallow frames were not quite perfect in their sealing, was of good quality, both in the county and open classes. The exhibits, which also comprised bee-keeping appliances, were staged in an attractive manner in a large marquee, and were inspected by large crowds during the day. The duties of judge were carried out by Mr. A. J. Carter, of Billingshurst, the list of awards being as follow:

MEMBERS' CLASSES.

Twelve 1-*lb. Sections*.—No first awarded; 2nd, Mrs. H. Trewby, Brixton Hill.

Six 1-*lb. Sections*.—1st, Col. J. A. C. Younger, Brabœuf Manor; 2nd, E. Carpenter, West Clandon; 3rd, W. E. Hamlin, Surbiton; c., Mrs. Trewby.

Six 1-*lb. Sections Heather Honey*.—1st,

Archibald Seth-Smith, Cobham; 2nd, G. C. Bullen, Cobham.

Two Shallow Frames of Comb Honey.—1st, H. J. Snell, Worplesdon; 2nd, Archibald Seth-Smith; 3rd, Mrs. Marson, Fetcham.

Single Shallow Frame Comb Honey.—1st, W. E. Hamlin; 2nd, A. Seth-Smith; 3rd, F. B. White, Redhill.

Twelve 1-lb. Jars Medium-coloured Extracted Honey.—1st, Miss Schloesser, Great Bookham; 2nd, A. H. Hamsher, Bramley; 3rd, A. E. C. Mumford, Redhill.

Six 1-lb. Jars Light-coloured Extracted Honey.—1st, John Smith, Chilworth; 2nd, W. Holmes, jun., Windlesham; 3rd, H. C. Gibbs, Redhill.

Six 1-lb. Jars Extracted Heather Honey.—1st, G. C. Bullen; 2nd, A Seth-Smith; 3rd, M. J. Lamball, Chiddingfold.

Six 1-lb. Jars Extracted Honey (Heather Blend).—1st, W. Holmes, jun.; 2nd, A. Seth-Smith; 3rd, G. C. Bullen.

Six 1-lb. Jars Dark-coloured Extracted Honey.—1st, Dr. Wakefield, Charlwood.

Six 1-lb. Jars Granulated Honey.—1st, Dr. Wakefield; 2nd, M. J. Lamball; 3rd, F. B. White.

Six 1-lb. Jars Granulated Honey (Heather or Heather Blend).—1st, G. C. Bullen; 2nd, A. Seth-Smith.

Beeswax.—1st, Dr. Wakefield; 2nd, W. Holmes, jun.; 3rd, John Smith.

Three 1-lb. Jars Extracted Honey.—1st, A. H. Hamsher; 2nd, J. Bowden, Witley; c., J. T. Helby, Cobham.

Three 1-lb. Sections.—1st, Col. J. A. C. Younger; 2nd, J. Bowden; h.c., J. T. Helby; c., H. J. Snell and Miss Cooper.

OPEN CLASSES.

Six 1-lb. Sections.—1st, C. W. Dyer, Newbury; 2nd, J. Fairall, jun., Hellingly.

Six 1-lb. Jars Light-coloured Extracted Honey.—1st, H. W. Saunders, Thetford; 2nd, Dr. Elliott, Southwell; 3rd, R. W. Lloyd, Thetford; v.h.c., R. Morgan, Cowbridge.

Two Shallow Frames Comb Honey.—1st, F. B. White; 2nd, Mrs. Marson.

Single Shallow Frame Comb Honey.—1st, Mrs. Marson.

Beeswax.—1st, H. W. Saunders; 2nd, Messrs. Goodburn Bros., Peterborough; 3rd, R. Morgan; c., C. W. Dyer.

Observatory-hive, with Bees and Queen.—1st, Messrs. Overton and Sons, Crawley.

HIVES AND APPLIANCES.

Collection of Hives and Appliances.—1st, Messrs. Overton and Sons.

Complete Frame-hive.—1st, J. Bowden; 2nd, Messrs. Overton and Sons.

Most Suitable Outfit for a Beginner in Bee-keeping (price not to exceed £1 10s.).—1st, Messrs. Overton and Sons.

A cleverly-arranged "trophy" of honey products by the Misses White was much admired. There were also educational and instructive exhibits staged, not for competition.—F. B. WHITE, Hon. Sec.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE DRONE'S HONEY-SAC.

[7890.] Ask any half-dozen of your bee-keeping friends to tell you whether or not the drone possesses a honey-sac, and they will probably be puzzled. To my own knowledge, many good bee-masters would answer incorrectly. It is a point on which our numerous treatises are curiously reticent, and on which, apart from microscopical examination, an inquirer has nothing to guide him.

Granted that, unless good cause could be shown to the contrary, we should expect to find the same alimentary arrangements in the drone bee as in the females of the race. On the other hand, the differentiation between the sexes is so notable externally—e.g., in the shape of the head and legs, and, as regards number, in the abdominal rings and in the joints of the antennæ—that no moderate amount of it internally would be surprising. Why should the drone require a honey-sac? He needs no storing-vessel, for he collects no nectar. Seldom long absent from the hive, he is nourished mainly by the workers on a special food, and when this is withheld from him he soon becomes enfeebled and dies. He needs no stomach-mouth to strain out pollen or to assist him in passing on chyle food to the larvæ. It would seem, then, that for the drone the simple passage from gullet to alimentary tube common in the insect world would suffice.

Such thoughts as these may have sometimes passed through my mind, but I must confess that many bee-keeping years went by before the question came up for settlement. It did not definitely occur to me that in respect of a honey-sac there might be any difference between drone and worker. This spring, however, while in Berlin, I went to the Zoological Museum, where on a previous visit I had seen an excellent collection of bees and wasps and specimens relating to the

economy of the hive. And now I noticed three little transparent bottles containing internal dissections of queen, worker, and drone of *Apis mellifica* preserved in fluid. The bodies were intact, but laid open so as to show the internal organs, and the alimentary tubes were partly detached. As, owing to the position of the glass case in which these were exhibited, it was not easy for the spectator to make out the smaller details, there had been attached in each instance a pen-and-ink sketch on which the names of the principal organs were duly written. In the queen and worker the sketches showed the speiseröhre (gullet) leading to a honigblase (honey-sac). In the drone the honigblase was not specified, and the passage from gullet to main intestine, though somewhat enlarged, was by no means spherical. Absence, in fact, was suggested by omission.

My interest being now thoroughly aroused, I wrote privately to the senior Editor of our journal, and when recently on a visit to us he brought with him some drones for dissection. The honey-sac was soon disclosed, and a closer examination showed the brown cross-shaped slits which form the mouth of this vessel. So whatever, in our humble opinion, may be the needs of the drone, there is no doubt that, like the females of his race, he is equipped with a honey-sac.

I have already said that bee-treatises make no mention of this matter: with one exception only, the internal economy of the drone seems to have failed to interest all writers on the honey-bee. While looking through the volume of the *Hamburgische vermischte Bibliothek* for 1745 I came across an article by Johann F. Stieglitz, a German pastor, commenting on the article by Hornbostel in the previous volume, in which he had announced his discovery of the origin of beeswax (see B.B.J., January 28, 1909). Stieglitz had also discovered the wax-scales in position about the same time as Hornbostel, but he did not agree with the latter as to how wax was deposited in the abdominal pockets, being of opinion that it was gathered separately by the workers and stored there while in a fluid state by means of their tongues. His arguments (pp. 256-67) are very interesting. At the close of his article he says: "As regards the drones, you will find them in spring possessed of a big and well-filled honey-bladder, but bearing no wax, for they have no scale-pockets suitable for carrying it." It is remarkable that for help in this little question of anatomy we should have to go back more than 160 years to a German clergyman.—H. J. O. Walker (Lieut.-Col.), Leeford, Budleigh Salterton.

NOTES BY THE WAY.

[7891.] During the last few days we have had a little more sunshine and warmth, and the bees have been busy on what little forage is left. I have a field of mustard within a furlong of my home-apiary, which I hope will help with the accumulation of winter stores by the busy workers.

We have no wasps in this neighbourhood—at least I have not seen a single one—and wax-moth does not appear to be so numerous as in other years. A neighbour had a stock—a weakling of spring—spoilt by wax-moth early in July, but in my own apiaries I have seen only a few isolated cocoons under the wraps of the supers. When these are found they are promptly destroyed. Taking forethought and removing all sections as soon as sealed over, and putting back the partly-filled ones into one rack only, as mentioned in my last notes, has, I feel sure, increased my take by quite a number of saleable sections. I was visiting a friend who keeps about forty hives, and when he was showing me first one hive, then another, he was surprised to find that the bees had taken the honey out of many of his sections which ten days before were nearly sealed over, but when we looked at them there were many with no sealed cells in them, and he said, with a sigh: "Ah! I wish I had taken them off when I looked at them before." But that hope of a spell of summer weather which sometimes does not come allures one to "bide a wee"—often to one's loss. I was very sorry for my friend, as he lives in a poor honey-district, and always has to feed liberally in the spring to get his bees to build up strong, and this year, to make matters worse, he only had one swarm from about forty stocks. Now, with but very little honey at the end of the season, and a prospect of having to feed for winter, it is most disheartening. With our fickle seasons one cannot advise anyone to take up bee-keeping as a means of livelihood.

Foul-Brood Act.—Since my last notes on this subject appeared I have had several letters of thanks for voicing the feelings of other bee-keepers on the matter. One correspondent says he has half a ton of honey, and two or three hives which had foul brood in a mild form. If the Act was in force, can our advocates of foul-brood legislation tell him what he could do with his honey if he were not allowed by law to sell it? Our Editor in a foot-note says it may be sold, but can it be so when Clause 7, after the visit of the inspector will close that apiary for trade in the products of the hives. If we are going to drive the pro-

verbial coach-and-four through the Act as soon as passed, where will be the advantage, if any, of such an Act? As to Mr. Holterman's remarks on the opposition on this side of the Atlantic to an Act, will he explain on what authority he bases his statement that bee-keepers in Ontario are unanimous in favour of legislation, if reports are correct of the futility of their own Foul-Brood Act in suppressing the disease? I know it is a big province, but ten years ought to have cleared out foul brood partially, if not completely. Again, little England has many more bee-keepers than Ontario, and as I read the American journals I gathered the percentage of foul-brood stocks was much higher than I should expect to find it in the worst-stricken districts of my native land. In my own district the reason of the reduction in the number of bee-keepers has not been to my knowledge foul brood, but is the result of the old bee-keepers dying off and the sons not taking up the craft. The middle-aged men of twenty or more years ago are still bee-keepers, but when they pass away there are no young bee-men to fill their places.

I trust others will give their views, and that those who are so anxious to obtain compulsory powers will revise the drafted Act so as to make it more reasonable and just to poor bee-keepers.

Respecting the vote of bee-keepers on the Foul-Brood Act, do the promoters think they will get half the papers returned? Just the few who take an interest in the matter for or against will fill up and return them; the many will not trouble to do so. Therefore it will not be the *vox populi, vox Dei*, but the voice of the interested few—and I think I may truthfully go further and say the organised few.—W. Woodley, Beedon, Newbury.

[If our worthy correspondent will carefully read Clause 7 to which he refers, he will see that only infected bees and produce are prohibited from being sold. Any produce from healthy hives could certainly be sold.—Ed.]

THE SEASON IN KENT.

FERTILE WORKER.

[7892.] The season in this part of Kent has once more been a failure. My take from twenty-one hives is 80 lb. of extracted and about twenty sections. All the stocks are in good condition at the present time—I have not seen them look better. They average from seven to nine frames of brood, and have plenty of stores, so they will not require much feeding. However, in the early part of June they were all on the verge of starvation, but as I did not think they were in such a state they were all supered, and I did not discover their condition until I noticed one fine day that the bees from one hive were in a very feeble state crawling about the front of the hive. On examining it I found the bees had no stores; but a pint of warm syrup soon put them in better heart, though three or four frames of brood had already perished. This caused me to look round, and I found all were more or less short of stores. Our chief source here is from the limes, which come into bloom at the end of June; but it was very wet the first six or seven days, so that the bees only had about three good days to work on them, but they pulled up in a remarkable manner, and my surplus, I believe, is from that source.

Fertile Worker.—It may interest you to know that one of the stocks which I found short of stores had superseded its queen, as I found two sealed queen-cells. I cut out one of these, and on opening it found the grub was dead. This made me suspect the other one might also be dead, but I left it for a week longer. It did not hatch, so I cut it out also, and found the grub dead. While I had the comb in my hand I noticed two or three eggs in the cells here and there. I have not had any experience with fertile workers, but came to the conclusion that the bees tried to rear queens from drone larvæ, which those I cut out turned out to be. Having some ripe queen-cells in another hive, I took one of these out, and as I did so the queen emerged from the cell. As I had the hives open and no cage at hand I simply dropped the young queen on the comb among the bees. They did not attempt to handle her roughly, but gave her a thorough examination. I then closed up the hive and did not touch it until the next week, when I found the queen had commenced to lay six days from the day she was hatched. To-day (August 13) she has three frames of solid brood. I should like to know if the fertile worker will give any more trouble, or will the bees destroy her now they have a fertile queen? When I examined them to-day there was a little drone-brood along the bottom of one comb. Thanking you for your kind advice.—John Chandler, Kidbrooke.

[You will most likely not be troubled any more, for so long as a fertile queen is present in the hive bees will rarely tolerate a fertile worker.—Ed.]

IMPROVEMENTS IN HIVES.

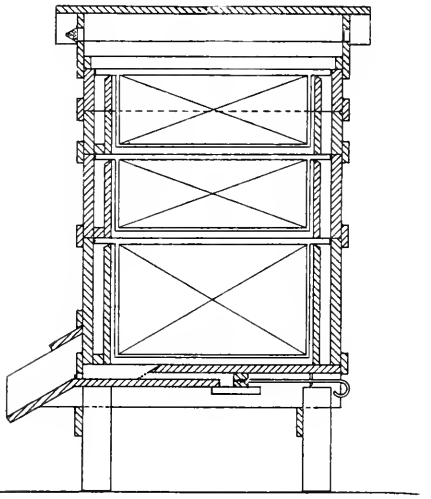
[7893.] In reply to your letter, I have much pleasure in enclosing a line drawing of my hive for reproduction in the B.B.J., with a view to obtaining the criticism of

your readers, which I shall much appreciate.

My idea has been to design a hive to combine all the advantages possessed by existing types, and yet remain as simple, efficient, cheap, and easy of construction as any one of them.

The brood-box I have made square, with plinths on all four sides, so that it can be turned at right angles for queen-rearing; it takes ten standard brood-frames and two dummies, making double walls on all sides.

The lifts are shallow-frame racks, each holding nine wide-spaced frames; they are interchangeable with the brood-box, so can be placed under it to induce the bees to commence work on the shallow frames. The upper lift is split so that the lower half of it can be used as an "eke" in



winter, or to form an extra brood-box if placed under the solid lift.

The floorboard is unusual in that it has *two* 3-in. entrances 6 in. apart, which I find most useful when splitting a stock into two nuclei separated by dummies. The alighting-board is divided by a board on edge (to which the porch is attached), and one half painted a dark colour, which prevents a queen entering the wrong nucleus. It may be mentioned that two nuclei can be built up to five frames each, and then treated on the "Wells" principle if desired.

At the inner ends of the two sunk entrances are perforated zinc runways, through which air can enter from a space under the floorboard, a sliding valve operated by a rod at the back of the hive controlling the supply. This ventilation is found of great value on hot days or when confining bees for a time.

In conclusion, I may add that the lifts will, without alteration, take racks of twenty-one sections if desired, and that painted calico is used for covering the roof.

Thanking you for the trouble you have taken and the helpful information we get in the B.B.J.—A. NORMAN HEARD, Orchard Hill, Bideford.

EFFECT OF STINGS.

[7894.] In reply to Mr. Walker's query (7889), under above heading, I will explain that I used the term "motor centre" not to describe the centre of motion, but as a term for the small mass of nerve matter or ganglia over which we have no voluntary control, and which, asleep or awake, maintains the heart's action, without any great variation throughout life, unless it be excited by drugs (strychnine) or depressed, as is the case in one or more stings in the circumstances I named. Then its action is impaired in degrees that may vary in result from "just a tired feeling" to complete collapse, or even death in the case of some animals. What actually happens is that the heart, failing to receive its usual stimulus with all its force, does not pump the blood so freely or so far. Amongst other organs, the brain suffers from anæmia, or loss of blood, fails partly in its functions, hence the feeling of faintness.

I do not think the sting on the cheek could have had anything to do with the "lost control of motion," as all voluntary movement is brought about by influences carried from the brain along motor nerves to the muscles in the part it is desired to move. The inference that movement has taken place is returned to the brain by sensory nerves. Neither of these pass near the cheek, and, so far as I can see, they should not be the first to be affected, if at all, by a sting on the cheek. If, on the other hand, your correspondent had suddenly lost a bad attack of toothache I should not have been surprised. As it is, I think it only a coincidence that they happened close together.—A. F. L., Chatham.

OBTAINING A MARKET FOR HONEY.

[7895.] Your reply to "Inquirer" (4027, page 289) is not encouraging to beginners and small bee-keepers. You say "the difficulty is in getting a regular supply," and that "dealers do not care to have small lots of different qualities." Is not this a case where the county associations might step in and be a real help to the small bee-keeper by either purchasing small lots or selling on commission? My idea is that each branch of an association should have a receiving office where the honey would be sampled or graded. Local

demand would be supplied direct from them, and the surplus forwarded to the central office, where it would be sorted into large parcels. I am aware that some associations take orders and pass them on to their members, but that doesn't get over the difficulty of "small lots of different qualities," and so doesn't help the small bee-keeper. The result of some such scheme as above outlined would, I am sure, be increased membership for the association, and the subject is worth further discussion.—W. A. C., Castle Cary, Somerset, August 8.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Novel Plan.—This is a new way of introducing queens—at least, as far as I am aware, it has not been given hitherto. "Take from the hive two combs with the adhering bees, and, by the use of a tin sugar-shaker, dust the bees thoroughly with powdered sugar; then sprinkle the queen well with the sugar, and allow her to run in between the two combs returning them to the hive." Mr. Hutchinson, in the *Bee-keepers' Review*, says that the inventor records that he has yet to fail with this mode of introducing.

Curing Foul Brood.—This is another novel plan: "Establishing a new brood-nest in the same hive where the old brood-nest is allowed to remain until the old brood have all hatched" seems at first glance like a tempting of providence; but, as the editor remarks, the work is done at a time when *new* honey is coming in freely. No old honey is being used. When the brood have all hatched, the old body-box, which has been at the top as a super for some time, has the honey extracted, the combs run into wax, and the frames burned. A further precaution is taken at the end of the season, as every comb that had contained brood is melted up.

"*Keep More Bees.*"—Mr. Hutchinson is never tired of advocating this doctrine. Here is his latest: "One subscriber wrote, 'No profit last year. Honey-dew. Twenty-three shillings from a like number of hives. Great! Keep more bees!' Another records, 'Perhaps it may interest you to know that I am now running 450 colonies and that my crop last year was 49,000 lb.'" And he still preaches "*Keep more bees!*"

"*The A B C and X Y Z.*"—Of the new edition just out the editor of *Gleanings* writes: "Taking it all in all, we have endeavoured to make this latest edition an accurate exponent of everything relating to apiculture. It is probably the largest work—that is, containing the most actual matter—of any of its kind in any language. We have spared neither pains nor expense in bringing it clear up to the times." As soon as I have digested the new edition of this encyclopædic work, I expect to have something more to say in its praises. At present it must suffice to assure readers of bee-literature in this country who wish to get something showing apiculture at its best outside the confined area of these Islands that in this book they will obtain excellent value for their money.

A Monster Apiary.—They do everything on a large scale in America. The latest idea is an apiary, or rather a series of apiaries, numbering *fifty thousand* colonies. The company owning this giant concern has been incorporated in New York, and it has established agencies in this country and Germany. The first thousand colonies have been started at Kingston, Jamaica. Bee companies in the past have not been a success. It remains to be seen how this mammoth one will succeed.

Farming Bee-keepers. — Mr. Morley Pettit, in *Canadian Bee Journal*, writes: "There is nothing on the farm which requires so little care in proportion to the returns as the bees. This is why they are so often kept at a loss, because the care they need is so small that it is utterly neglected. They require only a little attention, but that they must have"—and at the right time. When our small farmers waken up to the idea that bees can be kept successfully with little management, and that given when other labours on the farm are over for the day, they will discover a new and highly productive adjunct to other paying sources.

A Good Example.—The same writer says: "I have fed this week, June 10, to 400 colonies 1,400 lb. of sugar syrup, last week 1,700 lb., and previous to that about 2,000 lb. The corner has now been turned, and my bees are gathering clover nectar very freely." How puny our stores of sugar, or even our hundredweights, appear beside these tons! Unfortunately for me, I did not follow the above laudable example, and bees are not as strong as I would like. Feeding, at the right time, pays, and pays well.

Cleaning Out Extracting Combs.—Mr. Greiner says that he stacks all his supers in his yard behind the bees, securely closing them. The first pleasant day, about three o'clock, he opens the whole outfit from top to bottom *except* the regular entrance. In a few minutes the jubilee begins, and there is such a large surface to work on, by his sliding each alternate super to back and front, that the honey is cleared out as if by magic. There is no crowding, and hence no fighting. It is the jostling which causes ill-

temper. At dark everything is made bee-tight.

Over There!—The *Australasian Bee-keeper* numbers the bee-moth as a *friend* of bee-keepers. "When a bush nest dies out the moth riddles the combs, and permits the action of light and air to destroy the germs, and prevents swarms occupying the same combs!" The editor eats his cold meat with a lick of honey as an accompaniment, and—strange mixture, surely—vinegar. Try it, he says, "and you will continue it."

Bees were reported by a correspondent to be coming home heavily laden with honey after dark. The editor adds: "Bees in a heavy flow have been known to work by moonlight. If anyone possesses such a colony it might be advisable to try and perpetuate the strain." Several later reports corroborated the above peculiar fact.

Nomenclature.—I am pleased to see that some Americans are beginning to realise that a mistake was made in naming foul brood otherwise than as "black" and "foul." In the *American Bee Journal* Mr. Byer says: "From now on, whenever I have occasion to refer to the brood diseases of bees it will be foul brood and black brood." That is well! The editor says: "If we use the old name, '*black* brood,' there is less danger of confusion"—which is true, and I have been for long pleading for a reversion to the old *true* terms.

Feeding.—Dr. Miller, in an editorial, although the inventor of one of the most popular feeders in use, says: "If I could always have things to my liking, I would never use a feeder. Frames of sealed honey would have the preference every time." That man has a level head on his shoulders.

Queries and Replies.

[4042.] *Changing from Blacks to Italians.*—Will you kindly give me a little help through the columns of your valuable journal? I have twelve bar-frame hives, bees covering ten frames in each. I would like to change them all into Italians by buying fertilised Italian queens. What would be the best time to buy the queens, how long should their own queen be taken away before introducing the Italians, which way is the best to find the queen on the combs, and would I have pure Italians next year, as there is no apiary nearer than one and a half miles? I have only kept bees for three years, and am doing very well with them, taking twenty racks of sections off six stocks. I have taken your journal for a short time only, but feel that I cannot do without it.—W. H., Cork.

REPLY.—As you are doing well with your present strain of bee it will be very foolish for you to change for foreign bees. If you carefully select in breeding, the British bee is much to be preferred to foreigners. 1. The stock should be queenless for at least twelve hours before introducing another queen, which should be done as soon as the honey harvest is over. 2. By a careful examination of each comb you will be able to find the queen. 3. Your colony would be all Italians by the autumn.

CUMBERLAND B.K.A.

COMING SHOW AT CARLISLE.

Owing to the present unfavourable weather making uncertain the amount of surplus from the heather, entries for the Carlisle show will be accepted up to Saturday, August 27. The show is to be opened at 1 p.m. on Wednesday, August 31, and a conversazione, to which all bee-keepers are invited, will be held in the evening of the same day.—G. W. AVERY, Hon. Sec.

Bee-Shows to Come.

August 30, at Cartmel, Lancs. — Bee and Honey Show, in connection with the Cartmel Agricultural Society's 38th Annual Show. **Entries closed.**

August 31 and September 1, at Carlisle.—Second Annual Show of the Cumberland B.K.A. will be held in connection with Carlisle Horticultural Society's Show in the Market, Carlisle. Schedules from G. W. Avery, Heads Nook, Carlisle. **Entries close August 27.**

August 31, at Chester.—Annual Show of C.B.K.A., in conjunction with Cheshire Agricultural Society. **Entries closed.**

September 3, at Dalkeith, N.B.—Annual Show and Meeting of Midlothian B.K.A. in the Town Hall, Dalkeith. Members and prospective members earnestly urged to attend. Schedules from C. N. Craik (interim secretary), Dalkeith, N.B.

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. Five open classes. Schedules and entry forms ready July 1, from A. Wakerell, 21, Mansfield Road, South Croydon. **Entries close August 31.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 13, at Woodstock.—Annual Show of the Oxfords. B.K.A., in connection with the Woodstock Horticultural Society's Show at Blenheim Park. Open classes for best 1 lb. jar Extracted, and best 1 lb. Section (no entry fee). Prizes, 7s. 6d., 5s., 2s. 6d. Exhibits become property of Association. Schedules from H. M. Turner, The Turl, Oxford.

September 14 and 15, at Cambridge.—Honey Show, in connection with the Cambridge and District Red Cross Horticultural Society. Four open classes. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, 52, Bridge-street, Cambridge. **Entries close September 10.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar,

also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

Notices to Correspondents.

J. R. (Ware).—*Examinations.*—You can obtain all the information you require if you apply to W. Herrod, Secretary B.B.K.A., 23, Bedford Street, Strand, London, W.C.

Puzzled (Bristol).—*Returning Swarms.*—The system is not new, but is one that is followed by many bee-keepers. The thing to remember is the extra supers when returning. If you try the method, no doubt you will find it successful.

G. C. (Garston).—*Breed of Bees.*—If you examine carefully you will probably find there are two queens in the hive.

N. S. (Worksop).—*Race of Bees.*—They are all pure British bees.

Bee-keeper (Penshurst).—*Queen-mating in Hive.*—1. It is impossible for a drone to fertilise the queen in the hive. 2. Commence feeding as soon as possible.

H. C. Taylor (Brecon).—*Managing an Apiary.*—The industry in this country is not carried on on a scale large enough for your purpose, and we can hold out little hope of your securing a position sufficiently remunerative.

Species (Atherstone).—*Race of Bees.*—The bees are not Carniolans, but ordinary English bees.

Schoolboy (Dursley).—*Dead Bees.*—It is evidently a bad case of robbing and fighting. Reduce the entrance to one bee-space.

E. E. C. (Woodham Ferris).—*Bees Not in Supers.*—It is too late now for you to obtain surplus. Yes; if the colonies are short of stores, continue feeding.

Allen Vale.—*Dead Bees.*—There is no trace of "Isle of Wight" disease. It may be paralysis or want of food. Try feeding, and let us know the result.

River Axe (Bleadney).—*Noise in Hive.*—It may be piping, which generally occurs in stocks that are preparing for sending out a cast, or you may have trapped some of the bees underneath the quilt; also it may be caused by the bees fanning.

W. H. S. (Chagford).—*Driven Bees Dying.*—The cause of death was suffocation. The box in which they travelled was not sufficiently ventilated. This is indicated by the moist condition of the bees. When overheated they disgorge the food, which sticks the hairs down over the spiracles, and so causes suffocation. Probably the box was also left standing out in the sun.

H. S. (Cheshire).—*Finding Queen.*—If you cannot manage it by going carefully over the combs, the best plan will be to put a piece of excluder-zinc over entrance and shake the bees from combs on a board in front, as you would a swarm. The queen will then be found when the bees have passed in, as she cannot get through. If you insert a frame of brood the bees will commence queen-cells if they are queenless.

M. A. W. (Hartridge).—*Bees not Entering Supers.*—The hive you mention is not a suitable one to work. You could have bought three "W.B.C." hives for the same price. Foreign bees are more liable to swarm than British, and the latter are the best to keep in this country. The hive that will effectually prevent swarming has yet to be made. Management goes a long way, together with the strain of bees. You cannot compel bees to go into supers until they are ready, and it is now too late in the season to obtain any surplus. The plan suggested would not work. We would strongly advise you to obtain simpler and cheaper hives.

E. J. S. S. (Birmingham).—*Candied Honey in Supers.*—1. Some honey candies very rapidly, and it is advisable when bees are storing that from mustard, rape, and such like plants to extract the honey as soon as stored. Of course if the bees were weak and deserted the supers the cooling would help to granulate the honey more quickly. 2. If the granulation is fine the bees would be able to use the honey; but if it is coarse it would be better to melt the combs.

D. R. (Sennybridge).—*Managing Bees.*—1. You had better examine the hive, and you will find full particulars for doing so on page 97 of "Guide Book," which you say you have. 2. It is too late to put on sections now, but you may have to feed the bees if they have insufficient provisions (see "Feeding Bees" in "Guide Book"). 3. There is no association in your county, but there is one in Glamorganshire, secretary, Mr. Wiltshire, Maindy Schools, Cardiff, and one in Monmouthshire, secretary, the Rev. H. G. Stanley, Marshfield Vicarage, near Cardiff, who would send particulars on application.

E. R. B. (Wye, Kent).—*Examination in Australia.*—We know of no examination for certificates for proficiency in bee-keeping held in Australia.

Beginner (Eccles).—*Bees not Working Supers—"Balling" Queens.*—1. Bad weather preventing the bees from

gathering nectar is the cause. They will not work in supers unless they are able to gather more food than they actually need. 2. We should say the insects are not bees, but flies. 3. The bees cluster round the queen in a ball so closely as to kill her. They do this sometimes during the first manipulation in spring, or if an alien queen is introduced without caging.

H. B. R. (Congleton).—*Leaving Eke on Hive During Winter.*—The eke has been left too long on the hive. You can remove it by passing a wire between the eke and body-box; the wire will cut through the comb. You can then remove the body-box and take away the eke, replacing the former on the floor-board. The comb in eke can then be cut out, the bees being brushed off in front of the hive. The operation should be carried out in the evening in order to avoid robbing.

G. A. R. (Kirton Lindsey).—*Bees and Objectionable Odours.*—It is difficult to say why your bees gathered no surplus, but there is no doubt that the odour of paraffin would be very objectionable to them.

G. E. D. (Camberwell).—*Estimating Quantity of Stores.*—1. Five to six pounds. 2. Eight frames well filled with food will provide the colony with about 30 lb. of stores for winter.

E. G. C. (Amersham).—*Curious Behaviour of Bees.*—1. No doubt the bees were suffering from paralysis, and will recover with the improved weather. 2. The term should be "granulated" and not "grained." It is evidently a mistake on the part of the seller. Probably the honey is foreign, and has been bottled by someone who is not familiar with technical terms used in connection with bee-keeping.

Rosewater (Essex).—*Transferring from Skep to Frame-hive.*—1. You can get the bees down by using a "Porter" bee-escape, and as you have never seen bees "driven" it will be the best plan for you to follow. 2. Let the skep remain until next spring, when, given good weather, the bees will work down.

Suspected Disease.

C. A. W. (Barnes).—We regret to say that the bees are suffering from "Isle of Wight disease," and the stock had best be destroyed without delay.

Honey Samples.

C. J. M. (Lincoln).—A good sample of clover honey. It lacks a little in density for show-bench.

Quercus.—Sample A is from fruit, and does not contain honey-dew. It is thin; otherwise a good table-honey. B is good in colour, very thin, and leaves a peculiar hot taste in the throat when swallowed. It has been gathered mainly from charlock.

C. A. H. (Lenzie).—A fairly good sample, worth about 56s. per cwt.

J. A. D. (Laurencekirk).—It is a delicious honey of first quality. You ought not to take less than 10s. per dozen. By all means send to the show; it should stand a very good chance of winning.

S. M. (Dumfries).—Certainly show it. We shall be much surprised if it does not win a prize; it is a beautiful sample of pure clover honey. We are pleased to hear you have done so well.

J. C. (Kidbrooke).—The light sample is devoid of flavour. The darker one is from fruit-blossom.

E. G. (Blackburn).—Nos. 1 and 2 are very good quality clover honey. No. 3 is badly fermented, and before using for food should be well boiled and mixed with half its bulk of cane sugar syrup.

E. C. R. (Baildon).—It is a medium-quality honey of a pungent, strong flavour, and we would not recommend you to exhibit it.

S. E. H. (Edinburgh).—Rather thin, but good in other respects. Mainly from lime.

J. C. P. (Swansea).—A very good honey, lacking just a little in density. It is quite good enough for the show-bench in light class.

W. B. C. (Eccleshall).—Yes; quite good enough for showing.

Novice (Stroud).—From white clover, and quite fit for the show-bench.

O. J. H. (Nether Wallop).—No. 2 is best in both flavour and density.

Editorial, Notices, &c.

KENT HONEY SHOW AT WYE.

The ninth annual exhibition was held at Wye on August 10 under ideal weather conditions, such as would have gladdened the hearts of bee-keepers had it occurred during June and July. Notwithstanding the bad season, the number of entries was only slightly below the average, and the usual high standard of excellence was fully maintained. It is also very encouraging to welcome such a large and increasing attendance of visitors interested in bee-keeping, which proves that the industry is making steady progress throughout the county.

Mr. W. Herrod, F.E.S., acted as judge, and also gave a most interesting lecture and demonstration during the afternoon. At the close of the show the prizes were distributed by Mrs. Dunstan. Subjoined is a list of the judge's awards:—

OPEN TO KENT.

Six 1-*lb. Sections and Six* 1-*lb. Jars Extracted Honey.*—1st (Past-President's (1907) Silver Challenge Cup), E. R. Nash, Smarden; 2nd, Mrs. Seadon, Bromley; 3rd, Rev. H. R. N. Ellison, Hothfield.

Six 1-*lb. Sections Comb Honey.*—1st (Past-President's (1908) Silver Challenge Cup), E. R. Nash; 2nd, A. Lepper, Wye; 3rd, Rev. H. R. N. Ellison; 4th, F. W. Arrow.

Two Shallow Frames of Comb Honey.—1st, W. J. Moody Smith, Pluckley; 2nd, A. H. Briggs, Bilting; 3rd, R. Gray; 4th, T. Head, Canterbury.

Six 1-*lb. Jars Medium Extracted Honey.* (Past-President the Right Hon. the Earl of Guilford's Silver Challenge Cup).—1st, H. C. Chapelow, Wye; 2nd, W. J. Moody-Smith; B. J. F. White, Beckenham; 4th, Mrs. Seadon.

Six 1-*lb. Jars Medium Extracted Honey* —1st, R. Dockeray; 2nd, E. R. Nash; 3rd, J. Hamilton; 4th, W. J. Moody Smith.

Six 1-*lb. Jars Dark Extracted Honey.*—1st, E. R. Nash; 2nd, J. G. Hall, Wye; 3rd, Mrs. Seadon; 4th, H. C. Chapelow.

Three 1-*lb. Sections and Three* 1-*lb. Jars Extracted Honey.*—1st, A. H. Briggs; 3rd, A. Lepper.

Beeswax.—1st, W. J. Moody Smith; 2nd, A. E. Allchin; 3rd, Rev. H. R. N. Ellison.

Mead.—1st, A. Lepper; 2nd, Mrs. Hall, Wye.

Bee-candy.—1st, J. Trendell; 2nd, S. Burden.

Single 1-*lb. Jar Granulated Honey.*—1st, J. Mepham, Orleston; 2nd, S. Darlington, Charing.

Cake Sweetened with Honey. 1st, Miss Gettings; 2nd, A. E. Allchin; 3rd, A. Lepper.

Display of Cut Flowers Visited by Bees.—1st, Mrs. Hall.

Three 1-*lb. Sections* (cottagers only).—1st, J. Goodsell; 2nd, A. H. Briggs; 3rd, E. H. Philpot.

Two 1-*lb. Jars Extracted Honey* (cottagers only).—1st, H. T. Hall; 2nd, J. Mepham; 3rd, W. Brown.

OPEN TO KENT, SURREY, AND SUSSEX ONLY.

Trophy of Bee-products.—1st (champion silver cup, presented by Mrs. H. J. King), Mrs. Hall; 2nd, Mrs. Seadon.

OPEN CLASSES.

Single 1-*lb. Jar Light Extracted Honey.*—1st, R. W. Lloyd, Thetford; 2nd, J. G. Nicholson, Langwathby; 3rd, Mrs. Seadon.

Single 1-*lb. Jar Medium or Dark Extracted Honey.*—1st, H. C. Chapelow; 2nd, J. G. Hall; 3rd, E. R. Nash.

Single 1-*lb. Section.*—1st, A. W. Weatherhogg, Willoughton, Lincs; 2nd, R. H. Baynes, Cambridge.

Beginner's Outfit.—1st, Mrs. Seadon; 2nd, T. Head.

Three Sections and Three 1-*lb. Jars Extracted Honey* (members of Ashford and District Association).—1st, Rev. H. R. N. Ellison, Hothfield.—H. C. CHAPELOW, Hon. Sec.

AMONG THE BEES.

ASSOCIATED EFFORT.

By D. M. Macdonald, Banff.

The old apt illustration of the bundle of sticks readily rises before the mind's eye. Singly each twig could be easily snapped; bound together they can withstand the strength of a Sandow or a Samson. Apiculturally we in the British Isles are weak in this respect, but truth compels me to state that Scotland lags far in the rear when compared with the sister countries. We can boast of many enlightened bee-keepers, yet each acts as a unit, widely severed and groping in the dark for want of knowing what others are doing. Over vast areas we can boast of four of the finest staple sources of honey to be found in any land—viz., fruit-bloom, clover, limes, and the heather. Yet for want of a knowledge of the best methods of harvesting and placing the crop on the market in the most taking form it is often forwarded in a way that depreciates instead of appreciating its value. Then there is no combination as to selling. Each man is here a law unto himself, often greatly to the detriment of his fellow-apiarists. A few get full value for their surplus; the many, for as good an article, obtain unremunerative returns. The honey of the horny-handed man of toil is as pure and as valuable as that of any lord in the land when gathered by the bees. It should be the aim of associated

effort to make it so when placed on the dealer's counter, or when disposed of to the summer tourist or autumn sportsman.

At present the proper management of bees is imperfectly understood, and their manipulation is badly carried out. With perhaps no good text-book and no good model to work from, wrong methods and roundabout processes are followed, disturbing to the studied order and regular government of the hive interior. The ire of the bees is thus raised unnecessarily, greatly to the distress of their keeper, and possibly of neighbours. The psychological moment is often missed when a rack or super should be placed on the hive, or some examination of the interior should have been made to determine the condition of the brood-nest. An association, by means of its experts, who have passed searching tests as to their abilities to manipulate a hive properly and right what is found to be wrong, should teach and disseminate a new and better order of things.

It should be an important aim of such a society to place before its members all the latest and most up-to-date bee-literature, in the shape of bee-books and bee-newspapers, and therefore a library is almost a necessity to the carrying out of the best work. Next to seeing many manipulations performed, it is well to obtain the how, when, and why they should be undertaken, as recorded in some good text-book written by a successful bee-keeper of the first rank. Bee-clubs could also be formed in every local centre, where bee-keepers might assemble periodically to discuss their hobby, listen to dissertations on some of the dark points of apiculture, and see the latest and best in bee-appliances. Such a club, too, could work on the co-operative principle, and by uniting should be able to purchase hives and appliances at wholesale rates. Many appliance dealers would be glad to deal with them on this system.

As a propagandist force nothing excels the influence of a really good lecturer, who can expound the mysteries of bee-keeping in a manner which makes them understandable by the average layman as well as the initiated apiarist. A good powerful lantern with a set of interesting slides vastly enhances the value of any discourse on bees. This holds good in autumn and winter, but in summer, throwing aside the superficialities and restraints of school-room or hall, and even the closely-reasoned and well-balanced sentences of a written dissertation, the lecturer will with first-hand illustrations from the hive interior contribute those bee-talks which at once go to the root of the matter. Example is far more potent than precept. Seeing the thing actually done by one who really knows how to do it is an invaluable boon to the budding bee-keeper, and may be worth reams of desultory reading or months of blundering along in the dark, without any light to guide the erring footsteps.

For many members of our bee-keepers' associations the annual show is the great event of the apicultural year. Exhibitors from all parts of the country meet with their produce in friendly rivalry, each buoyed up with the hope and expectation that his or her exhibit is the cream of the collection. This central show, good in itself, should not content any association. It should be the aim of every committee to use their influence individually and collectively to have a show in every local centre. Wherever there is an agricultural or horticultural gathering there should be also an apicultural exhibition. What could be more appropriate at a flower show than the essence of the flowers in the shape of luscious honey. These exhibits direct the attention of the public to the value of this delicious sweet, and hence sales will follow. Then, of course, non-members see and admire the tasteful display, and, carried forward by the spirit of emulation, resolve to join the association.

Then there is the sentiment of friendship generated by associated effort, to which I would assign a very high place. All bee-keepers are *brethren*, and the spirit of camaraderie acts at a meeting of apiarians as does the mystic symbols of masonry at a gathering of the craft.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES FROM NORTH HERTS.

"ISLE OF WIGHT DISEASE."

[7896.] The communication from Lieut.-Col. Hunter (page 306) postulates infectiousness as an essential characteristic of the "Isle of Wight disease," and thus throws doubt on the correctness of diagnosis regarding the complaint from which Mr. Yetts's bees are suffering (page 295).

Having carefully thought out the matter, I can find no certain proof of the infectious nature of this disease. A conclusive proof of its non-infectious character is apparently supplied by the experiment of Mr. H. M. Cooper, the details of which were given in Dr. Malden's

article. Bees were placed in a hive where others had died, given combs from another diseased lot, and fed with syrup from a third diseased lot. For nine months these bees remained clear of disease. Against this we have the assumption that robbing just prior to an outbreak is the cause of that outbreak. Swarms are also stated to have died off in from twelve to eighteen days when they have taken possession of "diseased hives"; but against this we have the fact that an established stock has been known to die off in nine days.

I am not convinced that *B. pestiformis apis* is the cause of the disease, although it may frequently be present. Many who keep bees must have noticed individual bees in spring-time that were unable to fly. Some of these have defective wings, but a certain percentage have the bowel distended, as in some Isle of Wight cases. A walk through my apiary (fifty stocks) on a fine morning in spring will probably result in the finding of half a dozen or more bees in this condition. In the early part of 1909 I examined a large number of these bees. Cultures from the chyle stomach on bullock-brain media frequently yielded a pestiform bacillus, but I do not think it was the cause of the constipation. If it multiplies in the body of the bee it is probably able to do so owing to the lowered vitality of the insect, brought about by the constipation or its cause. Until further evidence is forthcoming I shall not be content to assume that the presence of *B. pestiformis apis* in 62 per cent. of the diseased Isle of Wight bees has a similar explanation.

For a long time I doubted the existence of an "Isle of Wight disease." Stocks shown to me from time to time as suffering from this trouble proved to be affected by starvation, suffocation, unfertile queen, or some similar cause to account for the dwindling. Through the courtesy of Mr. Cowan, however, I eventually obtained information of a case about fifteen miles from here. The bees were dying by thousands, but unfortunately the owner was a skeppist, and also was unwilling to have the hives examined. A case which has come to my notice since then shows some of the difficulties which crop up and which would be unnoticed by anyone unfamiliar with bees. The Board of Agriculture had expressed the opinion that two stocks in frame-hives were suffering from "Isle of Wight disease." The owner stated that feeders had been on all the summer, but when I visited this apiary one lot was starving and reduced to a mere handful of bees, apparently healthy, and the other lot had been robbed out. The combs of the latter stock showed signs of black brood or sour foul brood.

According to Dr. Howard, who first investigated this type of foul brood, starvation is a contributory cause, and the adults are also affected with the disease.

Near these hives were hundreds of bees dead with the typical pollen-distended colon, and but for this I should have doubted the occurrence of "Isle of Wight disease" in this apiary. Starvation or sour foul brood is enough for any stock to contend with, and must have accounted for many a loss attributed to the new disease. It is difficult to overlook the fact that skeps suffer more than frame-hives and that bees that have special attention usually escape. Mr. Yetts's nuclei headed by Sladen's queens were probably well looked after. The recorded cures have either been spontaneous during the honey-flow or after the giving of sugar syrup.

Until we get a theory that will account for these facts we must consider the Isle of Wight problem unsolved.

B. alvei.—When the "Isle of Wight disease" has been satisfactorily explained, it would be a good thing if we could standardise our information on other bee-diseases. Every expert knows that *B. alvei* is a cause of foul brood, but no one knows how many kinds of bacilli have been so named.

Sternberg gives the thermal death-point of spores of *B. alvei* as 4 minutes at 100 deg. C. Professor Harrison gives it as 2 hours 45 minutes at 115 deg. C.

Harrison's bacillus is gram-positive. I can find no statement in other writers on this point. My favourite is a gram-negative organism. Dr. G. F. White suggests that most workers have written their description from mixed cultures.

When we have decided which is the genuine *B. alvei*, we might settle the question of its relationship to bee-disease. And then we might investigate the claims of some other organisms. (Note.—After staining in a particular manner, a gram-positive or gram-fast organism retains the stain when washed in alcohol; a gram-negative organism loses it. The characteristic is fairly constant, and is used for purposes of identification.)—G. W. Bullamore, Albury, Herts.

SOUTHERN SNATCHES.

MORE ABOUT SOUTH AFRICAN BEES.

[7897.] Replying to Mr. Crawshaw (page 257), I have no doubt whatever but that a South African native can be successfully introduced to any other race of bees that Mr. Crawshaw should wish to experiment with. I am not so sanguine, however, on the likelihood of getting a queen safely to England, especially in view of the fact that our seasons are directly opposite to the English. Our bees are inactive from April till August

(more or less), although there is no month that a careful apiarist cannot open a hive on most days. The journey seems very great for such a frail creature as a queen-bee with a few dozen workers to get through safely, considering the knocking about by rail and boat. I fancy a small stock in a specially-constructed travelling-box would be more likely to survive the journey. If Mr. Crawshaw thinks our race would be a desirable acquisition in England, I shall be very pleased to help him in carrying out his suggestion, if he will please write so that we can make arrangements. In regard to temper, I may say I have found them the most gentle and again the most vicious of bees. This I put down to the particular strain. They are usually consistent, and a quiet strain rarely gives any trouble. I have on two occasions met different hives simply impossible to work with, smoke having no effect whatever. A quick appreciation of the situation and a hasty retreat is the only way to avoid serious trouble in the neighbourhood.

Such cases are the exception, however, and, provided the bees are a well-disposed strain, I do not think it is possible to find a race more pleasantly or quickly manipulated. They are easily shaken from the comb, are not generally excitable, and quickly respond to smoke; indeed, a few puffs will sometimes clear them out of a hive entirely should the weather be warm and the apiarist not careful.

The "aromatic gum"—which, by the way, Mr. Crawshaw proposes to turn to account—is not a serious drawback. It is only in evidence towards the end of the season, and then is used chiefly in reducing entrances and filling holes. There seems no limit to the size of a hole these insects will not close up, and when one takes into consideration how often the necessity arises, this feature will be better understood. Shrinkage of wood is very great here in the winter months, even in well-made hives, so what must it be in old boxes and barrels and such receptacles where bees so often make their homes, more often than not of their own choosing.

My first acquaintance with the South African bee was a stock in an old 5-gallon paraffin-tin. They had already made a good start, although the tin had an opening 9 in. square (the full width of the top), which listed slightly downward just enough to let the rain drip over. Mr. Crawshaw's surmise about their "concerted action" is quite correct; it is a strong feature, and is well borne out during a honey-flow. My best hive last season filled a super of thirteen shallow frames (fitted with sheets of foundation) in six days, a day being only about twelve hours; but the bees can work from dawn till dark in our warm climate.

The latest B.B.J. just to hand reports

("*Southern Snatches*" *continued on page* 348.)

MR. H. STANLEY'S "HAVEN OF REST" APIARY, PULLOXHILL, AMPTHILL, BEDS.

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

What a person who has lived in a town for a number of years can do in the way of increasing his income when moved to more congenial surroundings in the country, and who is not afraid of work or too proud to learn from any and every available source, is illustrated very plainly by Mr. H. Stanley, who possesses not only an apiary at home but has also established an out-apiary. He writes as follows:

"We constantly hear of the advantages of going 'back to the land,' but country life needs attractions both remunerative and salubrious to make it pleasant to some people. For many years I moved in the centre of London, but about eighteen years ago established a printing business in this district, the southern part of Bedfordshire, and found it most essential in this rural spot to choose a congenial hobby. Bee-keeping was decided upon, but absolute ignorance of the management of bees necessitated the assistance of someone who *understood* them, and for very many years an old bee-keeper for a small fee manipulated the hives, starting first with the skep, then (reluctantly) with the frame-hives. Years passed, and small was the quantity of honey taken; sections were almost always found like the seaside restaurants during an inclement season, practically empty; and upon asking the operator if it was possible to get honey from the lower compartment, a few frames were taken out from the hives and a little was shown as 'good for squeezing through the muslin,' while a mass of brood was noted as useless, and recommended to be given to the chickens. Things went on in this way until I became more enlightened, and with the aid of the 'Bee-keepers' Guide Book' I was able to manage the bees successfully myself; so much so that for many years the number of colonies has increased, and honey in proportion has been taken in goodly quantity. During the season of 1908, when the two hives were stationed on the roof of the *Daily Mirror* printing office in Bouverie Street, London, I watched their progress, and put down two hives of bees here in their proper environment. I took the honey about the same date as it was removed from those in London, when it was stated that theirs contained 19½ lb. of honey and 1 lb. of wax, while those here, after leaving some 20 lb. to 25 lb. in each hive for the winter's consumption, yielded no less than 128 lb. of surplus in sections and extracted honey. Yet in this district there are some to be found who 'do not believe in these new-fangled ideas,' and to save themselves the trouble of 'stifling the bees' with sulphur at the end of the season are willing to hand over

MR. STANLEY'S "MOUNT PLEASANT" APIARY, PULLOXHILL, AMPTHILL, BEDS.

their bees to anyone able to 'drive' them and leave behind the honey.

"From this brief description one can understand the satisfaction it gives to learn from the columns of a previous issue of your valuable journal that a bee-keepers' association has been formed for South Bedfordshire, as it will prove a boon to many bee-keepers in this county. In closing, I feel that it is impossible to speak too highly of the help rendered by the various County Councils in providing qualified lecturers to educate the keepers of bees. Many can testify to this fact in this district, as most invaluable instruction was given during the last winter under the Bedfordshire County Council by Mr. Herrod, of Luton."

(*Correspondence continued from page* 346.)

the clover in bloom in England, the moment when all the bee-keepers' hopes are soaring high, and dreams of his golden harvest are near realisation. That they be realised to the fullest, and so in a measure compensate him for the disappointment of last season, is the earnest wish of a brother bee-keeper from the South. — HENRY MARTIN, Dannhauser, Natal.

"ISLE OF WIGHT BEE-DISEASE."

SULPHUR AS A REMEDY.

[7898.] I am hoping that we have found a cure for this disease or for the form in which we have it in this neighbourhood. Mr. Edwards, expert to the Bucks B.K.A., some time ago suggested that when I saw signs of it I should try dusting with flowers of sulphur. Shortly afterwards, a fortnight-old swarm was badly smitten, and for some days lost a few hundred bees daily. Late one evening I gave a dusting of sulphur to the bees and the nine combs they were on. Seven combs contained brood and honey, the other two honey only, none being sealed over. The result was that all unsealed brood was killed and the queen ceased laying. A fortnight afterwards no brood, dead or alive, nor an egg, and only a few hundred bees and queen were left. The parent stock, standing some 6 feet away, began to show slight signs of disease; these I drove out of their cheese-box and united to the remains of swarm, on the swarm's combs, after slightly dusting bees only with sulphur. This happened a fortnight ago, and the queen has only during the last day or two commenced to lay again, but it is a strong lot of bees still.

In another apiary a fortnight-old swarm began to show signs (about fifty bees down one day), so I used sulphur as with the other lot, with a like result to brood and queen. A week later I took out three frames containing mostly dead brood and honey. I killed the queen, and added a small lot of healthy bees with queen and two frames of brood. These are going ahead now—brood on six frames. Within a foot of this lot was another fortnight-old swarm in a butter-box, which I turned up and dusted slightly, as I thought it possible a diseased bee or two might have got in. Result, the same; but they are going ahead again, gathering honey, and queen is breeding well. The moral seems to be, dust the bees only. No sign of disease has since been seen in either apiary. The sulphur most certainly kills the disease and prevents it spreading to other colonies, which is a great point gained.

Mr. Yetts states (B.B.J., page 295) that he concludes the disease is not infectious. I suppose he means it is not so through the food. This is the conclusion I have about come to as regards the food—honey—in diseased dead stocks in spring, for in several instances within my personal knowledge stocks dead of disease were robbed out last spring. The robbers have done amazingly well considering the adverse season, and have thrown off swarms, which are at the present time quite healthy (one skep especially has been a marvel). In autumn the case seems to be different, as healthy stocks which robbed some diseased—not dead—ones last autumn were shortly after attacked by disease, and died out, some quickly, others during early spring. Did the stolen honey contain disease germs, or did the robbers become infected by rubbing shoulders with the diseased bees? And, again, does the honey at any time contain germs of this disease? I have some of last year's on hand, taken from stocks which died of disease, and will send a sample to anyone for microscopic examination, and it will be an easy matter to get some of this year's. If honey of this year contains live germs and last year's does not, it will almost appear that immersion in honey for a time kills them (this is quite contrary to foul brood experience). All the bees alive here are natives, with the exception of two hybrid Carniolans. Italians and those showing marked Italian cross are dead. How is that for natives?—A. SIMPSON, Norfolk Cottage, Chalfont St. Giles, Bucks.

[From our correspondent's success with sulphur it seems to indicate that the disease is paralysis, which is known to yield to such treatment. In the Southern United States, where the disease is prevalent, flowers of sulphur, sprinkled by means of a powder-bellows, has been found to effect a cure, but it kills all unsealed brood and destroys the eggs.—ED.]

LIMNANTHES DOUGLASII FOR BEES.

[7899.] With reference to the paragraph (7880) in your issue of August 11, I first saw *Limnanthes Douglasii* two years ago in an hotel garden in Ashburton (Devonshire), where it was used as a border plant, and what particularly drew my attention to it was the circumstance that it was literally alive with bees. Taking a note of its "name and address," I made a point of growing it in my own garden last year, and was disappointed to find that the bees entirely ignored it. This year the flowers were visited, but not to anything like the extent I had witnessed in Ashburton. Is it a question of soil, or season, or perhaps both?—R. S. JAMES, Mill Hill, N.W.

[7900.] My experience of this plant is exactly the same as that of Mr. Burbridge. It has bloomed very freely close to my hives this year, and has been almost entirely neglected by the bees. I have never seen more than two bees on the whole bed of these flowers at a time. The experience of others is so contrary to this as to make me think there are different varieties of the plant.—D. TAYLOR, Margate.

[7901.] If one of your correspondents having a little seed of above to spare this autumn would oblige me with some, I should be happy to pay postage.—H. O. MORGAN, Beecroft, Bath Road, Keynsham, Som.

[We have also received letters from Messrs. F. H. Fowler, J. S. Watson, and several others, who write in glowing terms of *Limnanthes*. Our own experience has been that bees visit the plant in the early summer, especially when other forage is not abundant.—ED.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Parthenogenesis (page 284).—Mr. Bullamore states that "his own view" is that in every egg laid by the bee (? queen) there are three potentialities of development. If this means, as, with its context, it implies, that he considers fertilisation to take place after the egg is laid, it is, whilst not new, a quite unsupported theory. If, however, he believes that fertilisation takes place before the egg is laid, it is difficult to detect any difference between his own view and the teaching of the text-books. At least, they appear to me to be the same.

Queen-wasps Working on Poplar (page 286).—Is it not most likely that the wasps were getting nest-building material from the leaves? They make use of a variety of vegetable fibre for this purpose.

Market for Honey (page 290).—In order to capture any portion of the £30,000 a year which is paid for foreign honey, the price of our product would have to be abnormally low. Much of this foreign honey is quite inferior and terribly cheap. I may be over-pessimistic, but I cannot help thinking that the indiscriminate manufacture of bee-keepers, and the "in season and out of season" advocacy of bee-keeping as a profitable occupation, has for its main result the production of an increased quantity of inferior sections, which the local grocer is expected to sell, and which discourage the honey-buyer. I am at one with W. Z. Hutchinson in a desire for better methods and increased production on the part of those already in the business, but I look with disfavour on the no doubt well-meant efforts of those who increase the worst kind of competition by painting one side only of this particular picture.

"I.O.W. Disease" and Sladen's Bees (page 295).—This is a very fine testimonial to the qualities of these bees, and those who have suffered might do well to try the strain thoroughly. Mr. Yetts might also let us have a report from his hives next season. There are, however, one or two trifling criticisms which I would make. If the facts are as stated, and this actually was a case of "I.O.W. disease," then the hives to which the virgins were introduced could not, I think, have been suffering *badly*. "Badly" would preclude any queen from reviving a stock, even by super-apian efforts, unless she did nurse work like some of her less civilised cousins. Incidentally, the queen of No. 1 stock is not yet in her "third year," seeing that she was about eleven months old at the time of writing. Would not second year describe her more correctly? There has been at least one report of the disease being carried to a distance by the apiarist, and these tabulated results do not prove that the "I.O.W. disease" is not contagious, but only indicate that the Sladen strain possesses disease-resisting qualities—perhaps an even more valuable conclusion. I should like to ask whether anyone in the Isle of Wight itself has tried these bees since the outbreak, and with what result?

Chronicles of Anna (page 296).—Have mercy, Mr. Smallwood! The weather, Domine! is quite bad enough without your talking of snow in summer. Admitting, however, that the weather is not what it used to be, these *Ann. Dom.* times, yet surely snow about the first of August is an anachronism even in Cumberland. Probably these notes were written in the spring (save the mark!), and the old system of dating letters to the B.B.J. would remove our fears. But,

Mr. Smallwood, which of the nine daughters of Jupiter and Mnemosyne smiled upon the painter's art? Or was there a tenth, and was she known as Anna? Muse again, Mr. Smallwood, muse again.

Bisulphide of Carbon—A Warning (page 305).—A word of caution is necessary here, as "D. M. M." in his notes has, by a clerical error, referred to this as a "lighted substance," as though it were ordinary sulphur. The fluid must by no means be brought in contact with a light. It is volatile, and the fumes are highly inflammable. The substance should be placed in a saucer in a closed chamber with the combs to be fumigated, when the fumes will do their work. "D. M. M." evidently recognises the danger, as he concludes with a warning.

Bee-stings and Rheumatism (page 308).—Most of the reported cases of cure seem to be those of slightly-affected patients. To test the matter thoroughly, I have obtained the "co-operation" of a local sufferer and his doctor. The victim is suffering from chronic rheumatism, I believe, and is so bad that he can only hobble with the aid of two sticks, several of his joints having no movement whatever. Since the spring I have applied twice a week from twenty to thirty stings in various parts of his anatomy, and there certainly seems to be a slight improvement. I hope to report more fully later on, for, as the patient himself says, if it will cure him "it'll cure anybody."

Bee-Shows to Come.

September 3, at Dalkeith, N.B.—Annual Show and Meeting of Midlothian B.K.A. in the Corn Exchange, Dalkeith. Members and prospective members earnestly urged to attend. Schedules from C. N. Craik (interim secretary), Dalkeith, N.B.

September 7, at Croydon.—Show of Honey, Wax, and Appliances, in connection with the Croydon and District B.K.A. **Entries closed.**

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. Open and Local Classes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 6.**

September 13, at Woodstock.—Annual Show of the Oxfords. B.K.A., in connection with the Woodstock Horticultural Society's Show at Blenheim Park. Open classes for best 1 lb. jar Extracted, and best 1 lb. Section (no entry fee). Prizes, 7s. 6d., 5s., 2s. 6d. Exhibits become property of Association. Schedules from H. M. Turner, The Turl, Oxford.

September 14 and 15, at Cambridge.—Honey Show, in connection with the Cambridge and District Red Cross Horticultural Society. Four open classes. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, 52, Bridge-street, Cambridge. **Entries close September 10.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

October 4 to 7, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for Honey, &c. Schedules from Mr. F. E. Hardcastle, 12, Hanover Square, London W. **Entries close September 5.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

*** NOTICE.—In the review of the Spanish book on page 333 the price given of 4 pesetas should be 3s. 4d., not 1s. 4d.

J. H. (Wheathampstead).—*Swarms in Skeps.*—Your swarms were evidently not strong enough to more than half fill the skeps. It would be advisable to unite them and make two out of the four, and feed up.

CHUTE (Andover).—*Value of Honey.*—We have no means of ascertaining the weight of honey imported, but the market price varies from 19s. to 30s. a hundredweight.

BEGINNER (Wales).—*United Hives.*—1. Remove skep, put queen-excluder on frames, and cover temporarily with a quilt. Drive the bees from skep in order to secure the queen. You can do this at the entrance of the hive, and as soon as you see the queen enter the hive cease driving, remove quilt, and place skep on excluder. The queen will now be below, and as soon as the brood in skep hatches out you can remove it. 2. If the frames of No. 2 are only partly worked it would be better to let the skep remain on until the spring. If, however, there are plenty of bees, treat as recommended for the other hive. They should be driven now, and we do not think there would be two queens. 3. If there are so many drones and no brood, it is usually a sign of queenlessness, and you should examine the combs to make sure that the colony has a queen, and if not you must give one.

DRIVEN (Brighton).—*Uniting Driven Bees to Stock.*—Unless you have another hive to place by the stock you have to take the risk of the bees fighting. They will sometimes unite in the way you propose, but more often the plan results in fighting. Adhere to the method recommended in "Guide Book" on page 107.

H. M. L. (New Forest).—*Prices of Books.*—There is no price given with Dr. Zander's "Studien über die Honigbiene," reviewed in B.B.J. The price of the new edition of the "A B C and X Y Z" will be advertised in B.B.J. as soon as it is in the market, the B.B.J. office being the London publishing agents.

Puzzled (Lancashire).—*Bees Robbing.*—1. You incur no liability by reason of your bees making an attack on your neighbour's bees. 2. You can do nothing to prevent it except confining the bees in the hive and placing them in a cool place for a few days. It is the neighbour whose bees are attacked who should take preventive measures. 3. Italians and their hybrids are well known to be inveterate robbers of weak stocks, but strong colonies can usually hold their own.

Albion (Lechlade).—*Queenless Colony.*—It is too late to unite in the way you propose. Your best plan is to drive the bees from the skep, then make an artificial swarm of the queenless stock and unite the bees with the driven bees from the skep, dusting both lots with flour and allowing them to run into the frame-hive together (see "Guide Book," page 107).

G. H. H. (Somerset).—*Sugar for Bee-food.*—We never advise feeding in autumn with unrefined sugar, such as Demerara, even if pure cane, as it is apt to cause dysentery. Pure cane refined sugar can be had, though that usually sold by grocers is made from beet. It was in order to supply the demand for the right kind that we arranged with a firm of West Indian importers to supply pure cane sugar through the B.B.J., but many high-class grocery firms will guarantee sugar when sold as cane. Write to the hon. sec. of the Somerset B.K.A., Mr. L. Snelgrove, Rockville, Albert Quadrant, Weston-super-Mare, for particulars of membership.

H. J. B. (Walthamstow).—*Teucrium Scorodonia.*—Bees visit this plant freely and produce honey, but we are unable to tell what the flavour is, as the plant is not sufficiently abundant for bees to store entirely from it. At any rate, it does not seem to affect what other honey they are storing at the same time.

B. B. (Ramsgate).—*Drones Cast Out.*—The young queen has been accepted, and the drones are being cast out because the bees have no further use for them.

G. T. (Clitheroe).—*Sainfoin and Borage Seeds.*—These may be obtained of most seedsmen. Try Mr. G. Rose, Liverpool, or Messrs. Sutton and Sons, Reading.

Abbottswood (Gloucester).—*Supposed Bee.*—The insect is a drone-fly, which closely resembles the bee, but if examined it will be seen that whereas the drone-fly possesses only two wings, the bee has four.

J. S. W. (Mildenhall).—*Driven Bees.*—You will find your question answered in several recent issues of the B.B.J., and also in "Guide Book" (see pages 151-153).

T. W. A. (Shepshed).—*Varieties of Heather.*—The specimen sent is *Calluna vulgaris*, or common ling.

Bee-maid (Northants).—*Burnt Bee-food.*—The small quantity of burnt sugar will do no harm, as it is so much diluted by the syrup.

E. J. S. (Kew).—*Food-supply for Winter.*—1. Candy should not be used as food until the final packing-down for winter. 2. After a season like the one just over there is no risk of the brood-nest being clogged with honey. 3. Your plan is impracticable; in fact, it is impossible to get bees into a second chamber at this time of year.

Enquirer (Colchester).—*Driven Bees.*—1. Not more than two lots should be driven into one skep; this is a good way of uniting. 2. In any case, it is only honey in the supers of infected hives which is considered harmless to human beings, but if the hive is in such a bad condition it is hardly nice to think of eating it. No doubt the best plan would be to burn the lot, honey and all.

J. C. E. (Kenilworth).—*Bees Fighting.*—It is a case of robbing, the attacking bees being from a neighbouring hive. At this time of the year bees are inclined to rob, and you must guard against it by not opening the hives more than necessary. Only expose them for a very short time.

A. Bee (Watling Street).—*Dead Queen.*—It is quite possible, or it may have been reared and cast out by the Italian nucleus.

Suspected Combs.

J. G. B. (Guernsey).—The comb is affected with virulent foul brood. Naphthol beta should not be put in the hives; it is only used to medicate the food. The bees have not left on account of your using "a little formalin," though an overdose of any strong-smelling disinfectant might cause them to vacate the hive.

Keswick Coddling (Portinscale).—Nos. 1 and 3 very old comb containing pollen and honey. No. 2 dried larva.

Honey Samples.

J. B. N.—All are good samples of white clover honey. No. 1 is the best for your purpose, and should stand a very good chance on the show-bench; it will require reliquefying.

S. W. L. (Glos).—Sample is a dark honey of good flavour, though rather lacking in density. Gathered from mixed sources. We do not notice the peculiar flavour you mention.

J. D. M. (Whalley).—From white clover. Flavour good, consistency fair, colour good. Worth about 56s. per cwt.

G. M. D. (Wenden).—Would do well to show in light class at local shows. A little too thin to win in strong competition.

F. J. M. (Hants).—The bees have had access to a jam or sweet factory, and carried home syrup, not honey. The flower is not heather, but, so far as we can judge in its dried-up condition, is the Sea Artimesia.

J. M. (Measham).—A beautiful clover-honey, and will do for show purposes.

YENOH (Catford).—The honey is a very good sample from lime. The price you ask is reasonable. It would do to show locally, but would not stand much chance against clover or sainfoin honey in a large show.

G. L. (Oxford).—No. 1 is nice bright honey of good flavour, rather thin, will do to show locally in light class. No. 2 is also rather thin, of medium colour, but bright and clear; flavour not so good as No. 1.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, 1 Skep of Bees, 12s.; 2 Stocks, on ten Frames, 15s. each; 1 Stock, on ten Frames, in "W. B. C." Hive, new this spring, 22s. The above splendid Stocks, with young Queens, and guaranteed healthy. Cash or Deposit.—WARREN, JUN., Great Horwood, Winslow, Bucks. d 6

STRONG HEALTHY STOCKS ENGLISH BEES, 24s.; Italians, 32s.; Hives, nearly new, 12s., 18s.; Racks of Shallow Combs, drawn-out, 4s.; Section Racks, Quilts, &c., all new this year; Honey Ripener, 8s.—R. W. BRIERLEY, Lustleigh, Devon. c 83

WHAT OFFERS? Good Stocks, in Hives or on Frames.—COOK, Worlington, Soham. d 5

HONEY, 62s. per cwt.; tins free. Sample, 4d. —THOMAS, Coedmelyn, Stackpole, Pembroke. c 96

6 STRONG, HEALTHY STOCKS, £5, or separate, £1 each.—READ, Farm, Wembley. c 81

Special Prepaid Advertisements.—*Continued.*

BEST SCOTCH SECTIONS, 10s. 6d. per dozen. —C. GARFITT, Coupar Angus, Perthshire. c 99

5 VOLS. "FAMILY PHYSICIAN," cost 37s. 6d., excellent binding, as new, will take £1, or exchange for good Honey Extractor. — BROWN, Myra Cottage, Torphins, Aberdeenshire. d 3

3000 PURE FERTILE 1910 QUEENS TO BE SOLD DURING SEASON, Swiss Brown Natives, 5s.; Blacks, Italians, Carniolans, 3s.—FREDERICK VOGT, 38, Clementina-road, Leyton, Essex.

FOR SALE, 3 Stocks of Bees, on ten Frames, in "Telescope" Hives, sufficient food for the winter, 30s. each.—C. J. ELLERT, The Gardens, Chicksands Priory, Shefford, Beds. d 7

"OBSERVATORY" ONE-FRAME HIVE, polished pine, as new, cost 35s.; also Wax Smelter, accept 12s. 6d.—F. J. NILAM, Finchampstead, Wokingham. d 8

15 BY 12 CAMERA, with three good dark slides. Exchange Honey.—COLLINGE, Leyland, Preston. c 80

FOR SALE, several cwt. good Light-coloured Honey, and 10 dozen Sections. Sample, 3d. —DAVID HANCOX, Deddington, Oxon. c 55a

HONEY, English Extracted and Sections, wanted for cash. Send sample and price. — W. H. SIMS, Hall Green, Birmingham. c 52

WANTED, Sections, first quality. Good price given. Prompt cash.—CHILTON, Southdown Apiary, Polegate, Sussex. c 41

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

BUSINESS ANNOUNCEMENTS.

100 LOTS HEALTHY DRIVEN BEES FOR SALE, 4s. per lot, on rail.—A. H. WITTS, London-road, Whitchurch, Hants. d 4

"ALNWICK" BEE-FEEDER, price 6d. each. Postage of one costs 3d., two 4d., six 6d., dozen 10d.—J. BALMBRA, East-parade, Alnwick. d 2

HEALTHY DRIVEN BEES, 1s. lb. Exchange anything useful.—WATSON, Kingsway, Mildenhall. d 1

HEALTHY DRIVEN BEES FOR SALE, with young Queen, 5s. 6d.; old Queen, 5s.; carriage paid.—G. A. GILLETT, Moreton-in-Marsh, Glos. c 98

HEALTHY DRIVEN BEES, young Queen, 1s. 3d. per lb.—GARNER, Broom, Biggleswade. d 9

HEALTHY DRIVEN BEES, at once, 5s. per lot. —W. H. HIGLEY, 49, Franchise-street, Kidderminster. c 89

200 LOTS WARRANTED HEALTHY BEES, 5s. and 3s. 6d. per lot, with Queens. — DENNETT, Whitchurch, Hants. c 54

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. CAMILLE P. DADANT.

For nearly half a century the name of Dadant has been associated with apiculture, and the founder of the firm, the late Charles Dadant, who left France, his native country, in 1863 to start grape-growing in the United States of America, commenced bee-keeping in the following year. Seeing its advantages, he soon adopted the "Langstroth" hive, and endeavoured to get his countrymen to try it, an attempt which provoked violent opposition from M. Hamet, the former editor of *L'Apiculteur*, who was a strenuous advocate of the straw skep and as strenuous an opponent of movable-comb hives. It is satisfactory to be able to chronicle that now *L'Apiculteur*, under the editorship of M. Sevalle, is as strong a supporter of movable-frame hives as formerly it was their opponent.

MR. CAMILLE P. DADANT, OF HAMILTON, U.S.A.

Mr. Camille P. Dadant, the subject of the present sketch, is a son of the late Charles Dadant, and was born at Langres, in France, on April 6, 1851. He got the basis of his education in the college of that city, and in 1863 the family removed to the United States and settled at Hamilton, where his education was completed, and where the family have lived ever since. He assisted his father in the apiary and was brought up to the business, which had already acquired considerable dimensions, the first out-apiary having been started in 1871 and a large trade in importing queens from Italy having been established. In 1874 C. P. Dadant was taken into partnership, and a year later the number of out-apiaries was

increased, each one containing from sixty to 120 colonies. A large business in extracted honey was built up, and the firm also took to the manufacture of comb-foundation. They are now among the largest manufacturers, a great deal of their produce finding its way to this country. In November, 1875, Mr. C. P. Dadant was married, and his family consists of seven children, three of whom are married. He has three sons, who now assist him in the management of the eight apiaries and the manufacture of comb-foundation.

Like his father, Mr. Dadant has been a regular contributor not only to the American bee-papers, but also to the Swiss, French, and Italian journals. He was also associated with his father in revising Langstroth's book and translating it into French; new editions of both, revised by him, have recently been issued. Mr. Dadant takes an interest in the National Bee-keepers' Association, and has been its secretary, vice-president, and president, and is at the present time president of the Illinois State Association.

Besides bee-keeping, which is his business, Mr. Dadant takes an interest in local affairs, and has been one of the active promoters of the big Mississippi River dam, now being constructed. It is the second largest in the world, will develop 200,000 electrical horse-power, and will be the largest single electrical plant in existence. The dam, which is between Keokuk and Hamilton, will create a lake twenty-five miles long and from one to three miles wide.

It was in 1887 that we first made the personal acquaintance of Mr. Dadant and his family, and we will always have a pleasant reminiscence of the courtesy with which we were received and shown all over the works and apiary. Mr. Dadant has done much by his writings to improve apiculture not only in his adopted country, but also in Europe, and we hope he may live many years to continue the good work begun by his father and so ably carried on by him.

NORTHAMPTON B.K.A.

ANNUAL SHOW.

The annual show of the Northampton B.K.A. was held in connection with the Municipal Horticultural Show at Abingdon Park on August 3 and 4. Notwithstanding the fact that the apiarist has been faced with an unfavourable honey season, the entries were more numerous than those of last year, and the quality of the exhibits all that could be desired. In the centre of the honey-tent Mr. Hiscock, of Loddington, staged a trophy of honey which was awarded a special prize. Mr. W. Herrod judged the exhibits, and during the day conducted three examinations, the candidates coming from Northampton, Peterborough, and Salisbury. A social tea was partaken of, after which Mr. Herrod gave a short address on some important bee-keeping questions—in particular on the treatment of foul brood and its cure. The question of legislation for bee-diseases was also discussed, a strong feeling being shown in favour of a parliamentary Bill dealing with these diseases, especially foul brood. Demonstrations in the bee-tent were given during the show, and bee-keepers exchanged their knowledge of bee-craft. The interest shown by the lookers-on was very marked.

The following were the awards:

Twelve 1-*lb. Sections.*—1st and silver medal, A. Hiscock, Loddington; 2nd, E. Palmer, Kettering; 3rd, C. J. Burnett, Northampton; 4th, G. Mason, Yardley Gobion.

Twelve 1-*lb. Jars Light Extracted Honey.*—1st, J. R. Truss, Ufford; 2nd, Goodburn Bros., Peterborough; 3rd, A. Hiscock; 4th, Miss E. Adams, West Haddon; 5th, J. Adams, West Haddon; v.h.c., L. Andrews, Peterborough; c., G. Mason.

Twelve 1-*lb. Jars Extracted Dark Honey.*—1st, A. Hiscock; 2nd, W. E. Hipworth, Peterborough; 3rd, C. J. Burnett.

Twelve 1-*lb. Jars Granulated Honey.*—1st, J. R. Truss; 2nd, W. E. Hipworth; 3rd, L. Andrews; c., J. Adams.

Shallow Frames of Honey.—1st, C. J. Burnett; 2nd, A. Hiscock; 3rd, J. Adams; 4th, W. Snow, Yardley Hastings.

Super in Glass or Wood.—1st, G. Page; 2nd, C. J. Burnett; 3rd, H. England, Moulton.

Beeswax.—1st, A. Hiscock; 2nd, C. Wells, Oxendon; 3rd, G. Palmer, Kettering; 4th, C. J. Burnett.

CLASSES FOR NON-FIRST PRIZE WINNERS.

Six Sections.—1st, W. Cooke, Orton, Kettering; 2nd, C. J. Burnett; 3rd, J. H. Wilmot, Stanwick.

Six Jars Extracted Light Honey.—1st, L. Andrews; 2nd, W. Snow; 3rd, J. H. Wilmot.

Six Jars Extracted Dark Honey.—1st, W. E. Hipworth; 2nd, Miss Bennett, Towcester; 3rd, W. H. Chambers, Northampton.

OPEN CLASSES.

Single 1-*lb. Jar Extracted Honey.*—1st, A. Hiscock; 2nd, W. Snow; 3rd, F. W. Hadfield, Grantham; 4th, J. Adams.

Special Class—Single 1-*lb. Jar Extracted Honey.* 1st, H. E. Barlow, Stoke-on-Trent; 2nd, A. J. Jackson, Thetford; 3rd, A. Hiscock; 4th, L. Cox; 5th, E. Palmer.

Honey-cake.—1st, Mrs. Burnett; 2nd,

Mrs. Mason; 3rd, Mrs. Goodburn; 4th, Mrs. Cox.—R. HEFFORD, Hon. Sec., Northants B.K.A.

YORKSHIRE B.K.A.

ANNUAL SHOW.

The Yorkshire Agricultural Show was held in Roundhay Park, Leeds, on July 26, 27, and 28, and, being favoured with good weather, large numbers of visitors passed the turnstiles each day. The bee and honey section contained the best display shown for a long time at this show, and competition was keen in each class, very few exhibits entered not being staged. Honey-dew, which was so rampant last year, was conspicuous by its absence, and the colour of most of the honey exhibits all that could be desired.

The Yorkshire Bee-keepers' Association held a meeting on the second day of the show, when a letter was read from the Rev. S. Smith regretting his absence and his being reluctantly obliged to resign the secretaryship owing to ill-health. Mr. W. E. Richardson, of Whitkirk, Leeds, was appointed in his stead. Demonstrations were given in the bee-tent each day, and the art of modern method in bee-keeping was explained by the Revs. R. S. Lamb and Hutchinson, assisted by Mr. W. Dixon, before large audiences.

Mr. F. Boyes, of Beverley, acted as judge, and made the following awards:

Complete Frame-hive.—1st, E. H. Taylor, Welwyn, Herts; 2nd and 3rd, W. Dixon, Kirkgate, Leeds; r. and h.c., Seeds and Bees, Ltd., Liverpool.

Complete Frame-hive.—1st, E. H. Taylor; 2nd, W. Dixon.

Twelve Sections Heather Honey.—1st, J. Pearman, Penny Long Lane, Derby; 2nd, W. Dixon.

Twelve Sections Honey (other than Heather).—1st, A. W. Weatherhogg, Willoughton, Lincoln; 2nd, J. G. Nicholson, Langwathby, Cumberland; 3rd, E. W. Spink, Green Tree, Easingwold; r., J. Pearman; h.c., W. Patchett, Cabourne, Caistor, Lincs.

Twelve 1-lb. Jars Heather Honey.—1st, Burn and Botham, Phœnix House, Whitby; 2nd, J. Pearman; 3rd, W. Dixon; r., J. F. Stephenson, Temple Bank, Bradford; h.c., H. Waddington, Kirby Hill, Boroughbridge.

Twelve 1-lb. Jars Extracted Honey.—1st, A. Jackson, Elveden, Thetford; 2nd, R. W. Lloyd, Thetford, Norfolk; 3rd, W. E. Richardson, Whitkirk, Leeds; r., F. Harris, High Ferry, Sibsey, Boston; h.c., A. W. Weatherhogg.

Twelve 1-lb. Jars Granulated Honey.—1st, A. W. Weatherhogg; 2nd, W. Dixon; 3rd, J. Pearman.

Beeswax.—1st, J. Pearman; 2nd, W. Dixon; 3rd, F. Harris; r., Goodburn Bros., Peterborough; h.c., E. W. Spink.

Six Sections.—1st and special, G. Garbutt, Ingleby Barwick, Thornaby-on-Tees; 2nd, E. W. Spink; 3rd, G. H. Whitehouse, Aberford, Leeds; r., J. C. Hall, California, Howden; h.c., H. Waddington.

Six 1-lb. Jars Extracted.—1st, W. E. Richardson; 2nd, R. Spaven, Sand Hutton, York; 3rd, E. W. Spink; r., G. Garbutt; h.c., F. A. Bean, Snaith.

Six 1-lb. Jars Granulated Honey.—1st, J. F. Stephenson; 2nd, G. Garbutt; 3rd, R. Spaven; r., F. A. Bean and J. C. Hall.—W. E. RICHARDSON, Hon. Sec.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NATIVES V. ITALIANS.

[7902.] Mr. Yetts (page 295) is, I consider, very unfair to driven bees—natives—in drawing comparisons between them and nine-comb colonies, or even three-frame nuclei of Italians. He should carry his experiment further and reverse the order by matching a driven lot of Italians against stocks of natives on frames. The result can easily by foretold. I have been a keen champion of our native bee for a long time. I wrote to the B.B.J. over twenty years ago as "Robin Hood" that I had given about a dozen Italian stocks two seasons' trial and found them far behind a good strain of natives. There is not the slightest doubt that Mr. Sladen and one or two others have by selection during a number of years greatly improved the honey-gathering qualities of the Italians in this country, but no one can breed out of them their natural propensity for robbing. This I consider their worst fault, for they will thieve, and, consequently, if there is any disease about they find it; and then, granted that they *may* gather as much honey as natives, they do not finish their work so well. How many prizes for comb-honey at our leading shows are won by Italians' work? Not many, I think. What single bee-keeper in this country of any standing who goes in for honey-production exclusively but has tried and discarded them for natives? A good strain of the latter will breed nearly as well as the Italians and gather more honey in indifferent seasons—and, unfortunately, these predominate with us.

Such has been my experience, anyway, and it has not been a small one. Take the present season, for instance. The cry from all quarters is "A bad season," yet there are several small skeps of natives here which have not done at all badly—much better than Mr. Yetts's goldens appear to have done. Within a few yards of where I am writing this is the small skep I mentioned in my communication on "Isle of Wight" disease. It threw off early in June a small swarm, certainly not 3 lb. weight, which was put into an empty butter box. This box it has filled, and it now weighs at least 50 lb. The cast came off fifteen days after the swarm, and was put on three frames of foundation, one of which was taken away for a few days, as it was bare of bees. When the young bees began to hatch, the three combs were barely covered by bees, yet they now well cover eight built-out combs, six of which contain brood, and have sealed at least 15 lb. of honey. The old skep is heavy enough to stand a long winter. It has stood on the same spot since early 1908, and has never had an ounce of food given to it, nor have its swarms mentioned above. In March, 1909, it did not weigh 6 lb., nor did it in February of this year, but a fortnight after it had increased to above 20 lb. by robbing several stocks, dead of disease, which stood within 20 ft. of it. It was either a case of rob or die of starvation. The three colonies are to be seen now in a chicken-run, 8 yards by 5 yards, in which above fifty chickens have been reared. (There are over twenty half-grown ones in it now.) At one end of the run is a pigsty, which has contained all the summer two porkers. A happy family, truly, for there has been no stinging of either chicks, pigs, or humans, which speaks well for the temper of the bees. I am open to pit two stocks of natives next season against any two stocks of Italians that can be brought to compete with them; they can be located within easy walking distance of this place—honey result to be worked for, and loser's honey to go to B.B.K.A., I to manage the natives, and pay them two visits a week only. One stock of each to be worked for sections, the other for extracting. I am only a working man—poultryman at present—so cannot go far afield.—A. Simpson, Norfolk Cottage, Chalfont St. Giles, Bucks.

"ISLE OF WIGHT" BEE-DISEASE.

[7903.] I was pleased to see in the B.B.J. of September 1 (page 348) that others are trying sulphur as a cure for this disease. When it first broke out in the Isle of Wight I had fourteen hives of bees all doing well; they were smitten, and commenced dying one after another. I tried all sorts of things—sulphur in syrup, also brandy, and I dusted the bees over with fresh-slaked lime—but lost them all, natives being the last to die. Then for two years I was without bees. Last year I got a swarm from Devonshire which did well and was very strong this spring. I put a super on early, which they filled quickly. I then put a second super on, which they had almost filled by July 1. They then sent off a large swarm, which I put into a new hive. Three or four days afterwards this swarm showed signs of disease. I then mixed sulphur with their syrup, and with a pair of bellows blew sulphur in at the entrance, but for some days they were very bad, the ground around the hive being thick with dying bees. I continued with the sulphur for about a week, when all seemed right again, and the bees at work. All went on well till Monday last (August 29), when the sickness appeared again, and four other hives near it appeared to be badly smitten. I have again blown sulphur into the hives and dusted the bees which cluster on the alighting-board. I was so hopeful in the early part of the season that I purchased more bees and increased my stocks to seven; two appear to be quite healthy.—T. Parker, Ryde, Isle of Wight.

FOUL-BROOD LEGISLATION.

[7904.] Looking back on the long period of time during which I have been engaged in bee-culture, principally for pleasure and the information to be derived from it, I ask permission through your columns to say how much I dislike the proposal of legal enactments for the purpose of regulating the keeping of bees, and more especially for trying to stamp out foul brood. My bitterest recollections during my bee-keeping career were the visit and interference of two so-called experts, which resulted in one of the worst attacks of foul brood that I ever had to contend with, and I have for nearly fifty years rarely wintered fewer than thirty stocks. All of us are aware of the bad effects which have often resulted from the laws enacted for the purpose of regulating or preventing animal disease, and what discontent and ill-success has been too often the result of such measures. How often have we heard of late that those concerned in the production of milk and bacon have declared that they would give up keeping cows and pigs altogether. I make the assertion, very confident that it will not be contradicted by the result, that if, so far as this wide district of the South-West of Scotland is concerned, the Government can be induced by interested parties to pass such measures as they require, we shall have bee-keeping

reduced to its very lowest ebb. There is little doubt that a full ⅓ per cent. of the stock of bees formerly kept has diminished, and I have direct evidence that in many cases any further interference with bee-keepers will result in the immediate sulphuring of all the stocks.—R. SERVICE, Janefield, Maxwellton.

THE SOMERSET COUNTY HONEY SHOW.

[7905.] When visiting the above show, held in connection with the Midsomer Norton Horticultural Show, I was much surprised to see the conditions under which the exhibitors had to stage their honey, and it seemed to me that a county bee-keepers' association should be able to afford a tent to themselves, with proper benches and staging, instead of a rickety, unlevel concern along the low side of a horticultural tent, where those staging exhibits are pushed and buffeted by exhibitors in the other sections of the show. I do not wish to cast reflection upon those responsible for the carrying out of the arrangements, but I think there is room for a very great improvement. I am a member of the Somerset County Bee-association, and although not an exhibitor myself, I think every convenience possible should be provided for those that are, thus ensuring the safety of the exhibits and assisting to make the success the show deserves.—P. J. D., Somerset.

EPILOBIUM AS A BEE-PLANT.

[7906.] I would very much like to know if any readers of the B.B.J. have noticed the value of Epilobium (willow herb) as a bee-plant. The wild variety is known by everyone, as it grows freely by the sides of streams and in boggy places. There are, I believe, several varieties cultivated, although I have only come in contact with one. It is a hardy perennial, grows about 6ft. in height, and continues to bloom for a very long time. Its bright rose colour makes it an attractive plant for any garden, but it has one great drawback—it spreads very rapidly, not only by roots but by seeds, which commence to blow about long before it has finished flowering. I have noticed bees in large numbers obtaining both honey and pollen from it even when the limes were at their best.

The weather here has been very much against bees. The rainfall during July was 4.28 in.; for August, up to the 29th, it was 3.17 in.—NORTHUMBERLAND BEE.

EFFECT OF BEE-STINGS.

[7907.] I should like to give my experience of above, as the subject is now under discussion in your pages. I happened to be hiving a swarm, and got stung on the back of the right ear. It swelled a great deal for about two days, but I had no pain. Two days after this happened I was standing at a distance of 10 yards from the hives when I got stung at the back of the left ear. I went direct to the house and applied ammonia; but while doing so I sickened. I started to vomit, and suffered great pain. The doctor sent for pronounced severe blood-poisoning. A few minutes after I came out in a rash over the whole body. I have had a good many stings, but have never had any pain or trouble with them except on this occasion. I think mine has been a case similar to your Kent correspondent.—LANARKSHIRE, Motherwell.

BEE-STINGS AND RHEUMATISM.

[7908.] I hope I am not troubling you too much, but, having read in your columns of the bee-sting cure for rheumatism, I should like to relate my experience. I have been laid up with rheumatism in consequence of a bee-sting a month ago, I was under the impression that a sting would do me good; but the doctor, who had kept bees, said I was to wear a veil and gloves to avoid another sting, if I did not want another attack. He also told me that he knew a bee-keeper who generally had rheumatism after a sting. I thought I would mention this as a reminder to those who, like myself, are sufferers not to get stung, or the results may be serious, as in my case.—F. JARRETT.

BEE-CULTURE IN CUMBERLAND.

At the opening of the Honey Exhibition at Carlisle on Aug. 31 Canon Rawnsley gave the results of the experiments made in different parts of Cumberland by experts this year. These proved conclusively the vital necessity and usefulness of bees to farmers and fruit-growers. In orchards not bearing well, hives were introduced, and certain trees were covered with muslin at the blossom-time. The results were that the trees to which bees had free access bore more fruit, while the trees from which the bees had been excluded were found to be without fruit. —*Times.*

Queries and Replies.

[4043.] *Good Honey-plant.*—I have been a subscriber to the B.B.J. now for nearly thirty years, and am still as proud of it as ever. I have sold, bought, and exchanged all kinds of goods through its columns, and I find it as good an advertising medium as any paper going. Now

I am enclosing you a sprig of one of the best autumn bee-flowers that I ever saw. It does not matter what the weather is like; if the bees can get out at all, they will be found working on it. Only last Sunday (August 28) I was watching, and saw bees by the score on the plant at 6.30 p.m. in a drizzling rain, and I thought there must be plenty of honey to account for their enthusiasm. Would you please give me the name of the plant, as no one can name it for me round here? It will grow anywhere, and needs very little cultivation. It does not seed, but is raised from cuttings, and soon grows into a large bushy plant, with spikes about 15in. in height; it dies down in winter and shoots up in the spring. You will notice by the leaves that it is very much like the cactus tribe.—E. P. Thompson, Gowdall.

Reply.—The plant is *Sedum telephium*, orpine or stonecrop, a succulent belonging to the order *Crassulaceæ*. Like all the stonecrops, it is a valuable bee-plant, and is easily increased by division. The plant should be lifted, divided, and replanted triennially.

[4044.] *Queen Dying in Travelling-cage.*—1. A short time ago I introduced a young queen to a stock. Upon first removing the old queen (second year) I put her in a travelling-cage with about a dozen workers, and some candy taken from three other cages in which queens had travelled, and put the cage in a dark cupboard. On examining the cage ten days later I found the queen and all the workers except two dead. Can you suggest any reason for this? 2. Please name the enclosed plant. I have a bush in the garden, and when flowering in the spring it is covered with bees. It has now a second lot of bloom, but the bees do not visit it. 3. What is the largest number of pieces of Apicure which can be put into a hive at one time with safety?—B. B., Kent.

Reply.—1. They may have died from want of food, or from becoming chilled, or from insufficient air through being overcrowded, or even from candy becoming sticky. 2. *Coronilla emerus*, or scorpion senna. 3. Not more than two.

[4045.] *Moving Bees.*—I shall shortly have to move two stocks of bees to another garden about 200 yards away. Will you kindly advise me on the following points? 1. What is the best time to move them? I shall give up possession of my present garden on November 14, but possibly I could arrange with the new tenant to let the bees remain where they are till the spring, if necessary. 2. Is it best to move them by day or at night? 3. Are the bees likely to go back to their old location in the spring? 4. There are some pig-sties at the bottom of the new garden. Are the bees likely to be affected by the odour from them?—F. S. E., Ipswich.

Reply.—1. You can move them at any time after November 1 without injury. 2. The best time is at night. 3. No, not if moved at the time stated, as when they fly in spring they will note their new position. 4. No.

[4046.] *Do Bees Injure Fruit?*—I shall be glad if you will tell me through your paper if it is at all usual for bees to attack fruit in the same manner as wasps, as two of my neighbours have complained that the bees have spoiled their peaches and plums. I am sending you a few bees I took from a peach. I have five hives of English black bees, and my fruit has not been touched by them, and therefore I do not think the enclosed bees are mine. Thanking you in anticipation.—W. W. G., Stroud.

Reply.—It has been proved conclusively that it is physically impossible for bees to injure fruit by piercing the skins even of such thin-skinned fruit as grapes. It is true that if the skin has been perforated by wasps or birds bees will gather the juice from the damaged fruit, often to their own detriment. So far as your neighbours are concerned, they ought to feel much indebted to you for keeping bees, as both peach- and plum-blossom must be fertilised by insects if the trees are to bear a good crop of fruit, and bees are the most active fertilisers known (see "The Fertilisation of Fruit-Blossom by Bees," by T. W. Cowan).

[4047.] *Name of Wild Bee—The Sting of the Queens.*—1. I send herewith a few specimens of the insects which have been working my delphiniums in large numbers. My own bees are black ones. 2. Do bees kill drones by stinging? If so, do they themselves not die, having lost the sting? 3. The "Guide Book" says a queen-bee only uses her sting to attack or kill a rival. Having stung her rival, why does she not perish from loss of her sting? I am, of course, going by the information I have received that when a bee stings (a person) it leaves its sting behind, and dies itself shortly after losing the sting. Can you advise me on these points?—Beginner, Moreton.

Reply.—1. The insects are known as *Apathus campestris* (female), a parasitic bee closely resembling the humble-bee. She makes her home in the nests of the bombi, and lays her eggs there, thus securing food for her offspring without the trouble of storing it. 2. Not usually; they generally maim by biting at the root of the wing. The drones are cast out of

the hive, where they perish on the ground from cold and hunger. The bee would die if the sting was used for the purpose. 3. The barbs of the queen-bee's sting are only rudimentary; therefore she can extract it without injury to herself.

WEATHER REPORT.

BARNWOOD, GLOUCESTER.
July, 1910.

Rainfall, 2·17 in.
Above average, ·01 in.
Heaviest fall, ·65 in. on 5th.
Rain fell on 10 days.
Total to date, 15·06in., as compared with 12·85in. for the corresponding period of last year.
Mean maximum temperature, 65·9; 7·1 degrees below average.
Mean minimum temperature, 52·5; 2·5 degrees below average.
Warmest day, 14th, 75.
Coldest night, 3rd, 40.
Relative humidity, or percentage of moisture in the air, 70.
Number of days with sky completely overcast at 9 a.m., 10; do. cloudless, 0.
Percentage of wind force, 33.
Prevailing directions N.E. and S.W.

F. H. FOWLER (F.R.Met.Soc.).

JULY RAINFALL.

Total, 2.36 in.
Below average, .71 in.
Heaviest fall in 24 hours, .65 in. on 5th.
Rain fell on 15 days.
Total fall from Jan. 1, 20.97 in.

W. HEAD, Brilley, Herefordshire.

Echoes from the Hives.

Last April I asked you for advice as to transferring, my first stocks being housed respectively in an old pail and a skep. I now send you an extract from my log of the result of the past season. I drove the bees in April during the early fine spell, after destroying all old frames, quilts, &c., and disinfecting hives, and gave full sheets of foundation on May 6. Stock No. 1 contained about one gallon of bees, and had sealed brood on three frames. Stock No. 2 had about three pints of bees and small patches of brood on two frames. I fed with medicated syrup until stores were sufficient. I then purchased a fairly strong stock on ten frames, and by taking brood from this and stores from No. 1 I had all up to ten-frame standard by June 14, when I supered with racks of sections. The bees in No. 1 went up straight away and filled nine sections, when they swarmed. No. 2 hive sent off a good swarm on July 14, and No. 3 hive a 7-lb. swarm on July 21. I now have five stocks on ten frames with about 40 lb. of stores each, and the last swarm on nine with three full frames of stores.

On August 1 I took thirty-nine 1-lb. sections, and returned thirty more to the bees, which were not quite sealed over though full of honey. I sent one stock to the heather, and as they would not go into sections I baited with partly-worked sections on August 14, and the bees promptly took possession.—C. T. KEY, Godalming, Surrey.

It is curious that there should be some difference of opinion about "Chapman honey-plant" (*Echinops sphærocephalus*), judging from the correspondence in B.B.J. for 1908. I find that the bees greatly appreciate it.

The season hereabouts was a fairly good one up to July 15, and our experience in this district has been more encouraging than that described by "Freda" in issue of August 11, several local bee-keepers having taken from 40 lb. to 50 lb. surplus per hive by the end of July, chiefly from shallow frames.—F. H. FOWLER, Gloucester.

A BEE-HIVE AS INCUBATOR.

Mr. H. Siebel sends us the following article, which appeared in a recent number of a German paper, *Neueste Nachrichten*:—

An American bee-keeper, Henry Decker, from Rome, in the State of Ohio, is, after many trials, convinced that a bee-hive is just as safe as, and is much less trouble and less expensive to hatch hen eggs in than, a first-class incubator. This man bought and tried an incubator a short time ago, and when at work with his hive it struck him that the temperature inside seemed to be as warm as in the incubator. He procured a thermometer, and found this to be true. He then resolved to try if the hive, in addition to collecting yearly 1 cwt. of honey, would also hatch eggs. He therefore arranged the super for its new work, putting at the bottom a cotton sheet to shut it off from the brood-chamber, and also allowing the heat from the brood-chamber to pass through. Round the sides of the super he put a feather cover, and he also put a thin feather quilt over the twenty eggs, which he entrusted to the new "chicken-rearer." All but two eggs produced chickens, which were just as strong and healthy as those from the incubator. The inventor has ever since that time used his "chicken-rearer" with a fresh supply of eggs in this way, and is strongly convinced that one bee-hive is as much use to him for this purpose as eight hens were before.

Bee-Shows to Come.

September 13, at Conway, N. Wales.—Annual Honey Show, in connection with the Conway Honey Fair. **Entries closed.**

September 13, at Woodstock.—Annual Show of the Oxfords. B.K.A., in connection with the Woodstock Horticultural Society's Show at Blenheim Park. Open classes for best 1 lb. jar Extracted, and best 1 lb. Section (no entry fee). Prizes, 7s. 6d., 5s., 2s. 6d. Exhibits become property of Association. Schedules from H. M. Turner, The Turl, Oxford.

September 14 and 15, at Cambridge.—Honey Show, in connection with the Cambridge and District Red Cross Horticultural Society. Four open classes. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, 52, Bridge-street, Cambridge. **Entries close September 10.**

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. Five open classes: Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s. 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Hardgate, Dalbeattie, N.B. **Entries close September 10.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades. Liberal prizes. **Open to all British Bee-keepers.** Schedules from H. S. Rogers, Secretary, Exhibition Offices, Palmerston House, Old Broad Street, London, E.C.

October 4 to 7, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. **Entries closed.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

R. W. (Rutherglen).—*Foul-brood Legislation.*—The point you raise is fully met by section 4 of Mr. Harris's letter (page 226 of B.B.J. for June 9 last). No reasonable person can expect that "the State inspectors will rid the country of disease, and, of course, leave themselves, Othello-like, without an occupation." So long as there are careless, ignorant, or selfish people to propagate the disease it will be necessary to have inspection, just as it is necessary to have sanitary inspectors for the prevention of diseases among human beings. As you are a reader of the American papers, it is certainly astonishing to learn that your study of them leads you to the opinion that foul brood will not decrease in this country through legislation, for the reports all go to prove the contrary. We are told in *Gleanings* by Mr. Holterman that "a bee-keeper in Canada opposed to foul-brood legislation would be a curiosity." In our travels all over the United States and Canada we never came across any bee-keepers opposed to it, and on every hand we heard of the benefits that had resulted. The report of the Commissioner of Agriculture for New York State now before us shows that in four years the disease had been reduced from 30 per cent. to 5 per cent. owing to the exertions of the inspectors. It rests entirely with bee-keepers whether legislation takes place or not, and the Government are not likely to introduce a Bill unless they see that there is a desire for it. It is in consequence of the pressure that has been put on the B.B.K.A. by bee-keepers and county associations that the question has been revived at this time. Your reference to the Ohio Foul Brood Act is hardly relevant, as "D. M. M." is quite correct regarding disinfection of hives. Although you quote section 6, you have overlooked the fact that appliances have to be disinfected, and that in America hives are included in this term, so that disinfection of appliances implies disinfection of hives.

J. W. G. (Huddersfield).—*Sugar for Bee-food.*—We should say that the sugar is pure cane. A simple test is given by Dr. Blake for determining whether sugar is chemically prepared or not. Place some of the sugar in a glass-stoppered bottle for a few days. If treated with chemicals, the odour when the stopper is removed will be disgusting; if, however, the sugar is pure cane, only the odour of molasses will be given off.

M. W. G. (Welshpool).—*Bees Attaching Sections to Dividers.*—Wood or tin should answer equally well. The abnormal season is the cause of their curious behaviour.

W. Randell (North Devon).—*Wild Bees.*—The humble-bee sent is *Bombus agrorum*. The description of the habits of *B. pratorum* given on pages 327 and 328 applies equally to this species, with the exception that *B. agrorum* always makes its nest on the surface of the ground, while the nest of *B. pratorum* is usually in a hole in the ground, and *B. agrorum* appears later in the season than *B. pratorum*, the queens not commencing to make their nests until about the beginning of June. *B. agrorum* is the yellow "carder-bee" common all over the kingdom. When the little colony is disturbed the workers lie on their backs feigning death, hidden in the grass, which they closely resemble, but when touched they sting.—(F. W. L. S.).—— W. R. (Hitchin.)—The specimen sent is a worker of *B. agrorum*. See above reply to W. Randell.—(F. W. L. S.)

E. H. W. (Birkdale).—*Starting Bee-keeping in India.*—As you know nothing about bee-keeping you should study the

"British Bee-keepers' Guide Book," which will enable you to decide if it is an occupation such as you would like to take up. In the hill country in India similar hives and appliances to those in use in this country may be employed. Where the natives keep bees in rough hives, the kind of bee they keep should be cultivated. This is *Apis indica*, which differs in size and depth of colouring with locality. Its habits are similar to those of our bees, and it is no more difficult to handle, and can be cultivated in frame-hives. A beginner should not attempt to import European bees, as it would certainly end in failure. Bees can be imported by only the experienced, so that we would advise you to confine your attention to *A. indica*, which is easily procured. "A Hand-book for Bee-keeping in India," by J. C. Douglas, was published in Calcutta in 1884, but we do not know if it is still obtainable.

G. T. (Clitheroe).—*Keeping Imported Queen.*—1. If the queen comes in a small travelling cage she should be placed over the frames of the hive you wish to introduce her to, putting the wire gauze downwards. Be sure that she is supplied with plenty of food, and the cage put in such a position that the bees are not able to liberate the queen. 2. This will depend on the sort of cage the queen is sent in. If one of the large cages, she could be kept for a week or even longer. Queens, however, coming from Italy are only provided with food to last them three or four days, and should be introduced as soon as possible after they have had a rest to recover from their journey.

J. S. (Carnforth).—*Microscope for Examination of Bees.*—You can get a microscope suitable for your purpose at prices ranging from £1 to £5 from C. Baker, 244, High Holborn, London, E.C.

W. J. W. (Plymouth).—*Combs Built Outside Dummy.*—The combs containing brood should have been tied into frames with tape and placed in the centre of the frames fitted with foundation. You will have to let them remain as they are now until next spring. See that the bees have plenty of food for winter, and wrap them up warmly. Early in spring you can follow out above instructions.

A. M. (Streatham).—*Confining Queen in Hive at Swarming Time.*—Your plan would not do at all; the entrance would get choked with drones trying to get out, and ventilation thus being stopped the result would be that the bees inside would suffocate.

Miss B. (Meaching).—*Sections Attached to Dividers.*—The sections are evidently spoilt for selling. You should use a groove-all-round section, with full sheets of foundation to prevent this happening, and also see that the hive is set perfectly level.

Once Bitten (Somerset).—*Infected Honey as Bee-food.*—1. We should not advise you to use the honey for feeding the bees, even if boiled first. Give them medicated syrup only. 2. The proportion of water to dilute the honey would be half its bulk. 3. At least half-an-hour; instructions for using naphthol beta are printed on each packet. 4. Renew as soon as that in the hive has evaporated.

F. L. (Bishops Stortford).—*Dealing with Granulated Honey.*—There is no method of extracting honey which has granulated in the combs. The only way of dealing with them is to melt them down.

Devon (Plymouth). — *Names of Bee-flowers.*—No. 1 is red clover, the second crop of which only is of use to the bees. No. 2 is charlock; good honey is obtained from this, which, however, granulates very quickly. The secretary of the Devon B.K.A. is Mr. R. W. Furze, Woodbury, S.O.

J. Hebditch (Somerset). *Buying Bees in Skeps.*—The last year's skeps will be the best to buy, as they will be headed by young queens; they will also travel safest.

E. L. (Westcliff).—*Three Queens in One Hive.*—Remove the old queen and the smaller of the others, as no doubt the larger queen is fertile. It is not unusual to find more than one in a hive under the conditions you describe.

Honey Samples.

Humilus (Crawley).—A very nice table-honey, but it is not suitable for showing, being much too thin. Gathered principally from clover. Honey should not be sent in a bottle with holes in the cap. Your sample had four, and was leaking badly.

Suffolk (Leicester).—Light honey of good flavour, gathered principally from charlock and clover. It is slightly lacking in density. Fit to stage in a local competition, but hardly good enough on all points for a first-class show. About 56s. cwt.

E. (Cheshire).—Very nice-flavoured honey of medium colour and fair density. From mixed sources, clover largely predominating.

R. B. M. (Lincoln).—Nos. 2 and 3 are capital on all points, and good enough for any show-bench. No. 1 is slightly inferior in colour and density, but a very nice honey. Like 2 and 3 it is gathered mainly from white clover.

F. V. W. (Gloucester).—The honey can-

not be classed as best quality, but it is of fairly good flavour: colour medium. Its worst point is in consistency, it being rather thin. Quite a palatable table-honey.

D. R. (Ledbury).—No. 1 appears to be a very good honey, but the flavour is slightly tainted by previous contents of the bottle in which it was sent. No. 2 is of good flavour and colour. Both are gathered mainly from clover. About 56s. per cwt. in bulk, or 10d. to 1s. per jar retail.

Ludlow.—The honey certainly has a very strong flavour; it has been gathered from fruit-bloom, principally blackberries, but there may be an admixture from the holly.

Elas (Sale).—No. 1 is principally from lime, very thin, and will require well ripening before being fit for table use. No. 2 is better in consistency, and is pure lime of good flavour, suitable for table use. We would not advise you to exhibit either, unless it is at a local show.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as "***Business***" Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

QUANTITY OF GUARANTEED LIGHT ENGLISH HONEY, 77s. cwt., or 9s. per dozen bottles. Sample 2d.—BARLOW, Bee-keeper, Stoke-on-Trent. d 16

GOOD LIGHT-COLOURED SECTIONS WANTED.—R. CARTER, Chartridge, near Chesham, Bucks. d 19

WILL EXCHANGE SECONDHAND "W.B.C." HIVES FOR DRIVEN BEES, Hives only used a few months; guaranteed free from disease, or will sell cheap.—CROWE, Central Avenue, Wigston, Leicester. d 2

BEST SCOTCH AND WELSH SECTIONS FOR SALE, 10s. 6d. per dozen.—C. GARFITT, Coupar Angus, Perthshire. d 14

HEALTHY STOCKS, on 10 Frames, crowded, 22s.; Italians, splendid Honey-gatherers, 32s.; 80 lb. from one Stock this year; Honey-ripener, Shallow Frames, Excluders, &c.—BRIERLEY, Lustleigh, Devon. d 13

WANTED, Driven Bees, with young Queen, 4 lb. lots; non-returnable boxes, 1s. 2d. per lb.—MONCRIEFF, Allenton, Derby. d 12

GEARED EXTRACTOR, 14s. 6d.; healthy Stocks Bees, Cowan Hive, 25s.; others, £1; Standard Frame Nucleus Hives, painted, 2s.; Louis cycle, good lady's, 25s. Exchange for Honey.—BEECROFT, Abbott's-road, King's Heath. d 18

Special Prepaid Advertisements.—*Continued.*

4 GOOD STOCKS, in Frame Hives, 1910 Queens, healthy, 15s. each; also 84 lb. medium Honey, 42s.—COOK, Worlington, Soham. d 11

1 28-LB. TIN OF SAINFOIN HONEY, specially selected for exhibition. Price 30s.—Apply, EXPERT, Bee Journal Office. d 15

WILL EXCHANGE GOOD DOUBLE BREECH-LOADER, in leg of mutton case, for Honey.—Address, HARROGATE, Bee Journal. d 25

FOR SALE, 2 cwt. best pure Honey, in bulk.—CARRETTE, Laurels, Wisbech. d 26

SEVERAL STRONG HEALTHY STOCKS, in Hives, with 1910 Queens, 24s., or on frames, 16s.—C. TOWNSEND, Lawnfield, Maidenhead. d 27

A GUINEA HONEY-EXTRACTOR, free on rail, 7s. 6d.—ROUND, 25, York-road, Birkdale, Southport. d 28

CROCUS BULBS, 100 1s.; Arabis plants, dozen 6d.; free.—BRAYSHAW, Aultmore, Keith. d 29

FOR SALE, Extractor, Ripener, cwt. first-class Honey, Racks, Shallow Frames, Combs Drawn Out, Excluders, Dividers, "W.B.C." Ends, Standard Frames, 100 Bottles, quantity other Bee Goods, mostly new.—WILLIAMS, 130, Ruskin-avenue, Manor Park. d 22

FINEST ENGLISH HONEY, 17s. 6d. per 28 lb. tin. Sample 2d.—DUTTON, Terling, Essex. d 24

FOR SALE, in one lot, ten Stocks Bees, five of them British and five headed by Sladen's Goldens and daughters, seven 1910 and three 1909. Inspection invited August 29 to September 10. Only reasonable offers entertained.—HEAD TEACHER, Heytesbury, Wilts. c 74

5 GOOD STOCKS OF BEES, good Hives, and rack of Shallow Frames, 30s. each, on rail.—A. JENSEN, Kingston, Hornchurch. d 32

6 STRONG, HEALTHY STOCKS, £5, or separate, £1 each.—READ, Farm, Wembley. c 81

HONEY, English Extracted and Sections, wanted for cash. Send sample and price.—W. H. SIMS, Hall Green, Birmingham. c 52

WANTED, Sections, first quality. Good price given. Prompt cash.—CHILTON, Southdown Apiary, Polegate, Sussex. c 41

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post-cards or for advertising purposes, 2s. 6d., post free.—Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige?—HERROD, Apiary, Luton.

WANTED, "Hymenoptera and Aculeata of British Isles," by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

BUSINESS ANNOUNCEMENTS.

HEALTHY DRIVEN BEES, at once, 5s. per lot.—W. H. HIGLEY, 49, Franchise-street, Kidderminster. c 89

DRIVEN BEES, free from disease, with good laying Queen, sent in well-ventilated unreturnable swarm boxes, 6s. per lot; good laying Queens, 2s. 9d. each.—THOMAS BRADFORD, Exper, Worcester. c 9

Editorial, Notices, &c.

SOMERSETSHIRE B.K.A.

ANNUAL SHOW.

The annual show of the Somerset Bee-keepers' Association was held on August 10 at Midsomer Norton, in connection with the Midsomer Norton Horticultural Society's Exhibition.

The quality of the honey was excellent, but owing to the bad weather of the past few weeks the number of exhibits was smaller than usual. The day being fine, Mr. Brewer, of Bath, gave an interesting bee-tent lecture during the afternoon.

The following is the list of prize-winners. Col. H. F. Jolly and Mr. S. Jordan were the judges:

OPEN CLASSES.

Collection of Honey and Wax.—1st, H. J. Moore, Foxcote, Radstock; 2nd, G. W. Kirby, 17, Priory Road, Knowle, Bristol; 3rd, H. Kingston, Whitchurch, Bristol.

Twelve 1-lb. Jars of Extracted Honey.—1st, H. W. Saunders, 43, Croxton Road, Thetford; 2nd, A. S. Hoare, Saltash, Cornwall; 3rd, C. W. Dyer, Compton, Newbury; v.h.c., H. J. Moore; h.c., F. Nicholls, Wanstrow, Shepton Mallet; c., G. W. Kirby and H. Kingston.

Twelve 1-lb. Sections.—1st, C. W. Dyer; 2nd, A. S. Hoare; 3rd, G. W. Kirby; v.h.c., H. J. Moore; c., H. Kingston.

GIFT CLASSES.

1-lb. Jar of Extracted Honey.—1st, A. C. Jackson, 103, Chalk Hall, Elveden, Thetford; 2nd, C. W. Dyer, 3rd, R. W. Lloyd, 8, Norwich Road, Thetford; 4th, F. G. Hales, Wellow, near Bath; v.h.c., A. F. Sims, Larkhall, Bath; h.c., H. J. Moore.

1-lb. Section.—1st, C. W. Dyer; 2nd, T. George, Henbury, Bristol; 3rd, H. W. Saunders; 4th, H. J. Moore.

OPEN TO MEMBERS AND RESIDENTS IN SOMERSET.

Collection of Bee-hives and Appliances.—1st, E. J. Burtt, Stroud Road, Gloucester.

Beeswax.—1st, T. George; 2nd, G. W. Kirby; 3rd, H. Kingston.

Observatory-hive with Bees.—1st, G. W. Kirby.

Three Shallow Frames.—1st, F. G. Hales; 2nd, H. J. Moore; 3rd, H. Kingston.

Honey Products.—1st, G. W. Kirby; 2nd, H. J. Moore.

Three 1-lb. Jars of Granulated Honey.—1st, H. Kingston; 2nd, H. J. Moore; 3rd, G. W. Kirby.

Six Sections.—1st, T. George; 2nd, H. J. Moore; 3rd, G. W. Kirby; h.c., H. Kingston.

Six 1-lb. Jars of Extracted Honey (Light or Medium).—1st, G. W. Kirby; 2nd, H. J. Moore; 3rd, F. G. Hales; h.c., F. Nicholls.

Six 1-lb. Jars of Extracted Honey (Dark).—1st, H. J. Moore; 2nd, F. G. Hales; 3rd, T. George; h.c., H. Kingston.

Collection of Six Sections and Six Jars Honey (B.B.K.A. medal class).—1st, G. W. Kirby; 2nd, T. George; 3rd, H. Kingston; v.h.c., R. Lane, Kilmersdon, Radstock.

NOVICE CLASSES.

Three 1-lb. Sections.—1st, H. Kingston; 2nd, R. Lane; 3rd, E. Andrews, Newton St. Loe, Bristol.

Three 1-lb. Jars.—1st, F. Nicholls; 2nd, E. Andrews; 3rd, R. Lane; v.h.c., Henry Kingston.

Challenge Honey-pot for the greatest aggregate of points won by H. J. Moore.—L. BIGG-WITHER, Assist. Hon. Sec.

THE SHROPSHIRE B.K.A.

ANNUAL SHOW.

The annual exhibition promoted by the Shropshire Bee-keepers' Association was held, as usual, in conjunction with the Floral Fête at The Quarry, Shrewsbury, on August 17 and 18. This year's display of honey, &c., was regarded as the best for some ten years, the entries having increased in number, the large quantity of 2,335 lb. being staged, while the exhibits were of exceedingly fine quality. It is pleasing to note that the county members were well able to hold their own in competition with the most favourably-placed districts, thus demonstrating that there are parts of Shropshire entitled to a national reputation for honey of a superl quality. The show proved a great success in every respect, and this was due in a great measure to the work of an energetic committee, headed by Mr. Roff King as chairman. The judges were the Rev. T. J. Evans, St. Peter's Vicarage, Rock Ferry, and Mr. A. Watkins, Hereford. The following were the awards:

OPEN CLASSES.

Twenty-four 1-lb. Sections.—1st, J. G. Nicholson, Langwathby, Cumb.; 2nd, F. C. Holmes, Welshpool; 3rd, S. Cartwright, Shawbury.

Twelve 1-lb. Sections.—1st, J. G. Nicholson; 2nd, A. S. Hoare, Cornwall; 3rd, R. H. Baynes, Cambridge; h.c., S. Lewis, Bridgend, South Wales.

Twenty-four 1-lb. Jars Extracted Honey.—1st, J. Boyes, Cardiff; 2nd, R. Morgan, Glamorgan; 3rd, S. Cartwright; v.h.c., E. Church, Cardiff.

Twelve 1-lb. Jars Extracted.—1st, A. O. Jackson, Elveden, Suffolk; 2nd, H. R. Millington, Wistanswick; 3rd, J. Boyes; r., R. W. Lloyd, Thetford, Norfolk;

v.h.c., R. H. Baynes; H. C. Barlow, Stoke-on-Trent; and C. T. Pugh, Shrewsbury; h.c., R. Morgan; G. H. Braddick, Canton, Cardiff; and E. Church; c., A. S. Hoare.

Twelve 1-*lb. Jars Medium-coloured Honey.*—1st, H. Greening, Fownhope, Hereford; 2nd, F. W. Smallwood, Ford; 3rd, H. W. Lamb, Albrighton, Wolverhampton; r., A. Hamer, Mumbles, South Wales; c., W. Shuker, Chelmarsh, and F. W. Norris, Sheaves, Church Stretton.

Twelve 1-*lb. Jars of Dark Honey.*—1st, A. H. Pugh, Shrewsbury; 2nd, A. Hamer; 3rd, P. Scott, Broseley.

Single Jar of Extracted Honey.—1st, A. O. Jackson; 2nd, G. Croxton, Grinshill; 3rd, R. H. Baynes; v.h.c., H. W. Saunders; R. L. Welbourne; and J. Tudor; h.c., H. R. Millington and J. Chetwood.

Single 1-*lb. Section.*—1st, J. G. Nicholson; 2nd, A. Hamer; 3rd, R. Holland, Wellington; v.h.c., N. W. Wilthew, Knockin.

Trophy of Honey.—1st, P. Scott; 2nd, F. C. Holmes, Welshpool.

Best Hive Suitable for Modern Bee-keeping.—1st, Little and Cooper, Shrewsbury; 2nd, G. Rose, Liverpool; v.h.c., Little and Cooper; h.c., G. Rose.

Collection of Applianees.—1st, Little and Cooper; 2nd, G. Rose.

Beeswax.—1st, R. Morgan; 2nd, A. S. Hoare; 3rd, A. Hiscock, Loddington, Northants; v.h.c., H. W. Saunders, and F. W. Norris.

MEMBERS' CLASSES.

Twenty-four 1-*lb. Sections.*—1st, S. Cartwright.

Twelve 1-*lb. Sections.*—1st, R. Holland; 2nd, J. Davenport, Wheatley, Shrewsbury; 3rd, P. Jones, Chelmick, Church Stretton.

Twenty-four 1-*lb. Jars of Extracted Honey.*—1st, H. R. Millington; 2nd, S. Cartwright; 3rd, R. Holland; c., Mrs. W. Powell.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, H. R. Millington; 2nd, E. Brookfield; 3rd, Mrs. J. Weston; r., J. Tudor; v.h.c., J. Leach, Harmer Hill, and R. Holland; h.c., P. Graham, Montford.

Twelve 1-*lb. Jars Medium-coloured Honey.*—1st, H. W. Lamb; 2nd, P. Scott; 3rd, N. W. Wilthew.

Twelve 1-*lb. Jars Dark-coloured Honey.*—1st, P. Scott; 2nd; P. Jones.

Twelve 1-*lb. Jars Granulated Honey.*—1st, N. W. Wilthew.

ARTISAN MEMBERS ONLY.

Twelve 1-*lb. Sections.*—1st, E. Brookfield; 2nd, W. Passant, Baschurch; 3rd, W. Rowley, Bomere Heath; h.c., J. Hammond, Acton Scott.

Twelve 1-*lb. Jars Extracted Honey.*—1st, T. Tudor; 2nd, J. Mills, Shavington Gardens; 3rd, E. Brookfield; v.h.c., H. R. Millington.

Six 1-*lb. Jars Extracted Honey.*—1st, H. Millington; 2nd, T. Tudor; 3rd, J. Mills; r., H. R. Eddowes, Clive; v.h.c., J. E. Miles, Baschurch; h.c., W. Rowley.

COTTAGE MEMBERS' CLASSES.

Six 1-*lb. Sections.*—1st, R. Blakemore, Bayston Hill; 2nd, G. Croxton, Grinshill.

Single 1-*lb. Section.*—1st, R. Blakemore; 3rd, J. Jones, Chelmick.

Twelve 1-*lb. Jars Extracted Honey.*—1st, G. Croxton; 2nd, J. Chetwood; 3rd, R. Blakemore.

Six 1-*lb. Jars Extracted Honey.*—1st, G. Croxton; 2nd, E. Micklewright, Harmer Hill; 3rd, R. Blakemore, Shrewsbury.

Single 1-*lb. Jar Extracted Honey.*—1st, G. Croxton; 2nd, J. Chetwood, Nunnerley, Wem; 3rd, R. Blakemore; v.h.c., J. Bright, Little Ness; h.c., R. H. Elson, Wellington.—S. CARTWRIGHT, Hon. Sec.

THE CHEVIOT AND TWEED BORDERS B.K.A.

ANNUAL SHOW.

The first show of the above association was held on August 27 in conjunction with the Glendale Horticultural Society at Wooler.

The proof of the great good that the formation of this association has done for bee-keeping in the district was complete. In former years a few sections were staged anyhow, while very few bee-keepers thought of showing at all. A few sections, a few bottles, no particular classification, with very little interest—certainly none among the general public—might describe the state of affairs; but this year the tale was very different. The honey shown made such an attractive display that the general public was interested, while bee-keepers were very much in evidence. The bee-tent, with demonstrations and lectures, drew quite large crowds and gained several recruits for bee-keeping. Mr. James Waddell acted as judge, and he was unfeignedly pleased and surprised with the quantity, quality, and the general appearance of the exhibits and the marked improvement in bee-keeping since he used to live in the district himself. The awards are as follows:—

Six 1-*lb. Sections.*—1st, R. Robson, Wooler; 2nd, N. Beveridge, Ewart.

Three 1-*lb. Heather Sections.*—1st, N. Beveridge; 2nd, J. W. Mills, Wooler.

Super Heather Honey (above 5 lb. weight).—1st, Thos. Mills, Wooler; 2nd, J. W. Mills.

Beeswax.—1st, R. Robson; 2nd, Thos. Gordon, Bendor.

Three 1-*lb. Sections* (prizes given by Glendale Horticultural Society).—1st, Captain F. Sitwell, Yearle House; 2nd, John Robson, Commonburn.

Three 1-*lb. Heather Sections.*—1st, H. Hall, Wooler; 2nd, T. Bruce, Wooler; 3rd, Captain Sitwell.

Three 1-*lb. Jars Extracted Honey* (prizes given by Glendale Horticultural Society).—1st, Jas. Turnbull, Three Stone Burn; 2nd, J. W. Mills.

The silver and bronze medals of the B.B.K.A. were won by R. Robson and N. Beveridge respectively.—F. SITWELL, Hon. Sec.

AMONG THE BEES.

SECTIONS AGAIN.

By D. M. Macdonald, Banff.

Harvesting.—Happy are all bee-keepers who have secured a large take of honey in this tempting form. The industry viewed as a hobby is an interesting and delightful one, but the labourer is worthy of his hire, and selling honey well is frequently a more difficult task than "growing" it. The anxious time of harvesting our produce is now with us. Whatever may be said of not using smoke earlier in the season, he is not a wise man who would think of withdrawing supers without it or some other intimidant. Use it sparingly, however, and thus save your honey from a foreign odour and preserve your bees' amiability. Every step in taking off supers should be taken smartly yet deliberately, and with undisturbing motions. Rough, jarring, or bumping movements raise the ire of the bees, and any such unnecessary commotion is reprehensible. Supers should be withdrawn without making the bees conscious of their deprivation of hard-won stores. When roused, it is no marvel if they wrathfully resent their owners' appropriation of what cost them so large an amount of toil. Think of non-bee-keeping neighbours with their dread of stings, and take all pains to harvest honey peaceably. Use escapes of some kind, and so handle only honey, and not bees. Do this kind of work in the early morning or at night when all commotion speedily quiets down.

Grading.—This process should be carefully attended to, because on its right carrying out may depend repeat orders. When a sample is requested it is not perhaps in human nature to forward a poor one, but neither should one of the best be selected. A fair medium should be chosen as representing an average of the whole. While none need be much finer than the sample, very few should be inferior. All irregularly-built sections that would travel badly should be rejected. All light-weight ones, all badly travel-stained, those not well fixed to the wood at sides and bottom must be placed in the second class. Faults in the wood by staining or otherwise should be a detriment. Loosely-fixed joints and sections off the square are unfit to travel. Then honey should be uniform in quality as far as possible. Colour and consistency deserve consideration when grading. If clover- or heather-honey is being sold let the filled order be according to sample, and sell all blends separately. Do not grade any kind of dark honey as heather, and thereby spoil the market for yourself and possibly others in future years. Lime-honey, that from bramble, and even bell-heather nectar are not in the running when compared with the product of *Calluna vulgaris*. A good judge can easily tell the true from the false by sight, taste, and smell.

Cleaning.—I have been surprised at times to find sections dumped down on the counter of the grocer just as they were taken out of the hive. Every section sold should be presented to the consumer scrupulously clean, with no remnant of bracecomb, propolis, or finger-marks. A good deal of the scraping may be carried on while they are yet in the racks, because then each sweep of the knife covers a larger surface. When graded, each should be taken singly and gone over carefully until all are cleared of any foreign matter. Badly-fitting receptacles or those with too deep bottom supports are a nuisance, as they encourage the construction of an undue amount of bracecombs. Have racks very accurately made in length, breadth, and depth. In handling comb-honey have a basin of water and a towel always near at hand, in order that when honey sticks to fingers they may be washed clean. I do not care about sandpapering the wood of sections, because some of the fine atoms may cling to the honey. It does not make a fine sample appetising to find it coated with a fine, powdery dust. The honey-house should be scoured and dusted before packing and cleaning starts, so that no floating particles may find their way to the honey. Cover all sections with at least two or three layers of paper, and place paper below the layer of hay over each tier. Side and end packing can be made into pads to make matters safer.

Packing.—Waxed sheets measuring about 14 in. by 8 in. can be purchased from all dealers for about 4s. per 1,000. Turn section upside down, placing it in centre of sheet, folding the ends up, then reverse section, standing it as it stood in the hive. The pressure keeps ends of sheet in position. Place six sections side by side on a sheet of brown paper cut to about 20 in. by 24 in., and make a neat package. Fasten with twine wrapped

round the long way of parcel, and you have a nice firm "brick" which, when bedded in hay or straw all round, will bear a good deal of rough handling. Place two or three inches of the packing material in the bottom of a grocer's empty, chosen for size according to the amount of honey ordered, then place a layer of parcels on this, and pack round sides and ends, and, if thought advisable, between each row, to make all solid. Above this place a second row packed securely in the same way. Nail lid and fasten with a cord, or, if the box is a large one, insert rope-handles in holes at both ends before sections are placed in the box. Use a prominent label, "Comb-honey. With great care. This side up," in addition to the address-card. Send by passenger train at "half parcel rate." The honey should reach the customer all right if these directions are closely adhered to.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of August, 1910, was £3,431.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A DEAL IN ARTIFICIAL HONEY.

[7909.] The following account of fraudulent dealings in artificial honey, taken from the current issue of *L'Apiculteur*, the monthly bulletin of the Paris Central Society of Apiculture, will be found, I believe, both interesting and instructive:

"An important fraud connected with the conveyance of honey has just been discovered at Dijon. It will be remembered that at the close of their last session the Chambers of Legislation, in view of the difficulty experienced by French bee-keepers in disposing of their products, imposed duties of thirty and fifty francs respectively on imported genuine and artificial honey, the latter article being chiefly composed of sweet syrups and glucose treated with sulphuric acid. To escape the higher duty two great biscuit and gingerbread manufacturing firms at Dijon recently caused to be sent them from Hamburg a boat-load of 90,000 kilos (88½ tons) of artificial honey—300 casks of 300 kilos—labelled 'Pure Honey.' These passed unquestioned through the custom-house at Havre, where certain precautions had, it may be assumed, been duly taken. All was going well, and the boat was wending its way peacefully onward, when a jealous trade competitor of the Hamburg forwarding house denounced the fraud to the customs authorities at Dijon. On the arrival of the boat samples were taken, and these being tested in the laboratories both there and in Paris, were pronounced to be adulterated honey. A matter of 18,000 francs to the credit of the Treasury, and well worth the trouble.

"It is probable that to escape the scandal of this shabby trick the noted firms concerned will try to compound with the powers that be by paying up heavily. But, in any case, the Bourgoyne Apicole, a well-known association with nearly 500 members in Burgundy, intends to prosecute them, and has already instituted proceedings in the civil courts in the name of their devoted president, M. Bertrand. In taking this step the association has been actuated by its wish 'to protect respectable producers and tradesmen who deal in natural and first-class goods only against low and unfair competition. It desires also to warn the public against the more or less unwholesome productions which are forced upon it by the clever use of pompous advertisement.'

"The Société Comtoise associates itself in principle with the prosecution, and will decide to assist the Bourgoyne Apicole with funds as may be necessary."

Here, surely, is matter for the consideration and instruction of British bee-keepers. What might not be done for the furtherance of our industry if, say, 75 per cent. of those who keep bees in Great Britain joined their county associations, and these in turn heartily supported the B.B.K.A.?—H. J. O. WALKER (Lieut.-Col.).

CHLORIDE OF LIME FOR FOUL BROOD.

[7910.] With reference to the letter in the B.B.J. of August 11 (page 317) on the use of chloride of lime for foul brood, I should like to sound a note of warning against the indiscriminate use of such strong disinfectants. Having been troubled this season with foul brood, and being anxious to get rid of all traces before closing down for winter, I decided to try the plan recommended by your correspondent. I altered three hives as per Mr. Ashworth's sketch, and put the chloride of lime in for the first time on Friday, September 2 (three eggspoonfuls), repeating the dose on the following Tuesday evening. At neither time were

the bees disturbed; but to my horror, this morning (the 7th inst.) I found hundreds of dead bees on the alighting-boards of two hives; at the third hive there were none. All the three stocks were crowded on ten frames, for I had practically cured them with solution of formaldehyde. In one hive there were perhaps 300 live bees, in the other sufficient to cover three frames; the queen in each instance was alive. In the third hive everything is all right, but I have cleared out the chloride of lime, never to try it again. One stock was headed with a black, the other with an Italian, queen; both had ample stores for winter, and neither showed so many traces of foul brood as the third stock, which was not affected by the chloride of lime.

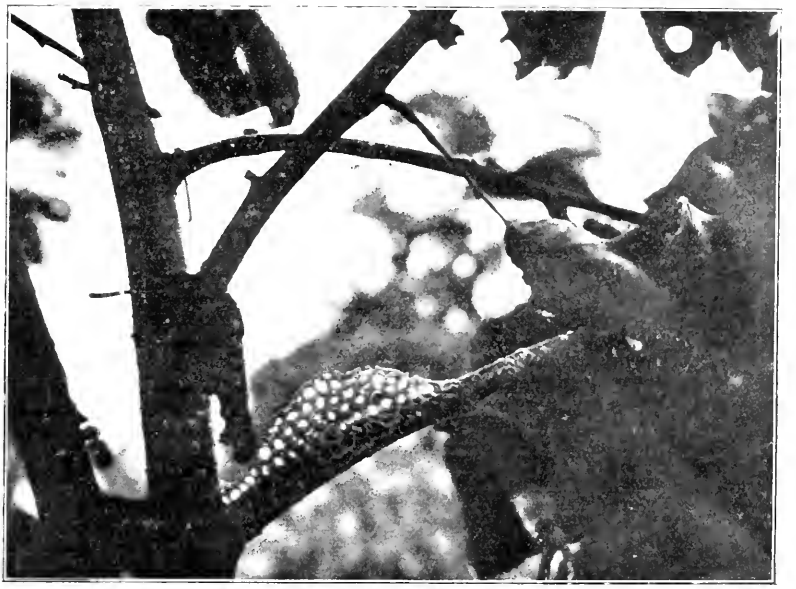
Can you suggest any reason as to why one stock should be able to withstand the chloride of lime when the other two were practically wiped out? All three were treated exactly alike in alteration to hive and quantity of the disinfectant given.

Perhaps if you print this letter in the B.B.J. it may be the means of making others think twice before using this method of ridding their hives of foul brood. It appears to me that the effect of chloride of lime is too uncertain, for when this was discussed in your valuable paper a short time back some found it successful, and many found it have the same effect as in my case—"wipe their stocks out," and in this manner get rid of foul brood.—C. H., Haslemere.

CURIOUS COMB-BUILDING.

[7911.] Enclosed you will find a photograph of a piece of comb built by a swarm which issued from their parent hive on July 30. In hiving the swarm I could not understand why the bees persisted in returning to the bough after being shaken off. Thinking that perhaps the queen was injured and might be clinging there, I climbed the tree, and was greatly surprised to find this piece of comb on *top* of the bough. The bees had been on the tree all night, during which time heavy rain had fallen.

I remember that Tickner Edwardes, in his book "The Lore of the Honey-Bee," remarks that he has only known of one instance of comb being built upwards, and he ascribes this fact to there being no support on which the bees could build dependent combs; but in this present instance there is a splendid position well sheltered with leaves. It was in a rather difficult position for photographing, with so many slender branches about. I found it necessary to lash the legs of the camera to the tree. I hope that the picture may be of some interest to fellow readers.—Bert Smith (Third-class Expert), Hanwell.



COMB BUILT UPWARDS.

NOTES FROM NORTH HERTS.

BEE-STINGS AND REMEDIES.

[7912.] Those who suffer from stings might try the prompt application of a solution of permanganate of potash. This is found useful in cases of snake-bite, and

both bee and snake venoms owe their toxicity to similar substances.

The use of ammonia was suggested when formic acid was thought to be the poison injected by the bee. It is now known that this has little to do with it. The dried venom is neutral, and when redissolved in water has the same physiological effects as the fresh venom. The active bodies are three albumoses which coagulate at different temperatures and which cause local, convulsive, and stupefactive phenomena respectively. Our knowledge of the chemistry of these bodies is still very imperfect, so that their combination with ammonia to form hexamethylenetetramine (page 318) is a doubtful proposition. Some aniline bodies are known to be capable of reducing the toxicity of venoms, and the "blue bag" may yet prove a scientific remedy.

Results of a Wasp-sting.—A healthy man, working in a garden, disturbed a wasps'-nest, and was stung on the back of the neck by one of the insects. He had been stung by wasps on previous occasions, so took little notice of the mishap. Ten minutes later he was seized with giddiness, which was quickly followed by inability to see. When I saw him shortly afterwards he complained of pain near the heart and of difficulty in breathing. The eyes were staring and sightless, and he face bluish. The exposed parts of the skin were covered with a rash, and he appeared to be intermittently unconscious.

Medical aid was three miles distant, so, by my advice, he was roused and a cup of hot, strong coffee (made with essence) was administered. His breathing then became easier, but he again lapsed into a state of stupor. More coffee was given, he commenced to breathe heavily, and from that time onwards made rapid improvement. The rash, which was all over him, disappeared during the night, and in the morning he felt no ill-effects from the mishap.

Advantages of Bee-stings (page 287).—Most healthy individuals would be willing to forgo the possible advantages if they could avoid the stings. I do not think that "Eltham" would get much satisfaction from a reply by a medical man. His best course would be to have a personal interview with a doctor, who would then be able to state if the effects were likely to prove harmful to "Eltham's" particular constitution. There is much diversity of opinion among bee-keepers as to the effects of stings. A few are immune from the first, some are never able to acquire immunity, whilst the greater proportion obtain a passing immunity which is kept up by successive stings. A long interval without a sting may be followed by a sting which produces a strong effect.

It is very probable, however, that the virulence of a sting is a variable quantity. The poison of a hungry snake is ten times more active than that of the same snake when well fed, and there is much variation between snakes of the same species. It is therefore conceivable that under the same conditions different strains of bees are not equally venomous, and also that this characteristic may vary with conditions of temperature and nutrition. Several correspondents have spoken of difficulty of breathing and of vomiting as resulting from the sting of a bee. The neuro-toxin that causes these symptoms is thought to be secreted by the alkaline gland. So far as I can discover, no work has been done which determines the conditions under which this gland is especially active. The local and stupefactive effects are thought to be due to secretions of the acid gland. Whether this gland responds to the same or different stimuli is also unknown.

Parthenogenesis (page 349).—"My own view" is a somewhat simplified statement of Professor Weissmann's "polymorphism in the idioplasm." Instead of speaking of "ids in the germ-plasm" I used the term "potentialities of development." I quite agree that it is in harmony with text-books, but we want more corroborative facts. Text-books on natural history subjects always postulate a uniformity which is never found in nature.

I know of no fundamental difference between a worker-bee's egg and that of a drone-breeding queen. I know of no fundamental difference between the egg of a drone-breeding queen and that of a normal queen. According to the text-books the development of some eggs into females is due to an external cause, viz., the spermatozoon. When this cell penetrates the micropyle it certainly ceases to be external, but it cannot become the original germ-plasm of the egg.

"His Own View" (page 349).—This means the view taken by myself and does not necessarily imply newness. For instance, when the funny man speaks of bee-stings as "hypodermic injections of formic acid," "my own view" is that formic acid has little to do with the trouble caused by a sting. It may be argued that we should not expect scientific accuracy in the comic columns, but I happen to read bee-books and bee-papers for the purpose of obtaining facts. When I want jokes I can get them in the works of well-known authors.

With regard to wit, "my own view" is in agreement with that of Addison as set forth in the *Spectator*. This was published about 200 years ago, so that it is by no means "new." — G. W. Bullamore, Albury, Herts.

BEE-STINGS AND RHEUMATISM.

[7913.] With reference to the letter from F. Jarrett (page 357) on the above subject, having had quite a different experience, I have pleasure in relating it for the benefit of any B.B.J. readers suffering from this complaint. On May last I was attacked with rheumatism, and it gradually became worse in spite of the doctor's attention. I then asked his opinion of bee-stings as a cure, and he entirely agreed that there was something in it. From that time I went in for bee-keeping "strong," and now have about twenty hives. I often got stung, having sometimes as many as six to eight in one day, and I gradually began to find great benefit. In a month the pain was less severe, and I can now say that the rheumatism has almost gone.

I should like to make one or two remarks on Mr. Jarrett's experiences. Surely he could not expect to receive relief from one sting. It is like one going to the doctor and expecting to be cured of an illness with one dose of medicine. Then I cannot credit his assertion that a sting brought on an attack of rheumatism.

Last year I attended a bee-lecture in Norwich Museum, given by a professor, and at question-time a doctor asked if he (the lecturer) considered bee-stings were good as a rheumatism cure. The professor replied that he had not actually analysed the poison, as it would require a great number of bees to secure sufficient—the amount contained in the poison-sac was so minute—but he went on to say that he entirely agreed that the poison from bee-stings was good for rheumatism; also it was a well-known fact amongst old bee-keepers that they seldom, if ever, suffered from this complaint.

I should advise Mr. Jarrett to get a little more experience by getting stung not once, but fifty times in, say, a month and then report on results.—Chas. Andrews, Haughley.

ENGLISH METHODS IN GERMANY.

[7914.] It might interest you to know that I have established quite an English apiary in this country. I am going to draw the attention of German bee-keepers to English methods of, and appliances for, bee-keeping. I have been keeping bees in England, but last winter came home to devote myself more than I did before to the craft of the bee-keeper.

I wonder how it is that in this country so little is known about English ways of keeping bees, though American methods are fairly well understood and imitated with more or less success. I am contemplating sending you a photograph of my apiary for your excellent B.B.J.

I still regret not to have had the pleasure of exchanging a few words with you at the conversazione last autumn, but I thought you were too busy for me to approach you.—R. Linde, Flettmar bei Meinersen, Germany.

IMPROVEMENTS IN HIVES.

[7915.] After reading the article on page 336 two or three times I have come to the conclusion that your correspondent is not acquainted with the excellence and simplicity of the "W.B.C." hive.

I doubt if there are many who would advocate a double entrance on so small a frontage—it is equivalent to standing stocks quite close together, which is against all rules of bee-keeping. The difficulties of the "Wells" principle are not lessened by cramping the system on to a ten-frame floorboard. I see nothing else which is novel.—A. Barnard Self.

Queries and Replies.

[4048.] *What Constitutes a Separate Apiary?*—Two brothers, both bee-keepers, wish to exhibit at a certain show, and the schedule says: "No two exhibits in same class will be accepted from the same household or same apiary." Now, one brother, A, resides in a town, B in a village eight miles away, where he has his bees in the garden adjoining his house. A's bees are kept in another garden 500 yards distant, and both apiaries are attended to by B. They have one honey-extractor between them, and A only visits his bees occasionally. Can these two brothers enter separate exhibits in the same class under B.B.K.A. rules?—Sewere, Cornwall.

Reply.—We should say not. Both exhibits would be considered as from the same household or apiary.

[4049.] *Quantity of Food Required for Winter.*—I shall be glad of a reply to the following questions: 1. If one of the brood-chamber frames were completely filled with stores, what would be approximate weight? 2. Are eight frames half-filled with stores sufficient for wintering a strong stock? 3. Do bees usually fly outside entrance in winter, and is it a good sign if they do so? 4. Is there any objection to placing a hive facing north during winter months?—A. B., Ardrishaig.

Reply.—1. About 5 lb. or 6 lb., but a great deal depends upon the density of the food. 2. No, they should be well filled. 3. Only on fine days, when they take a cleansing-flight, which is good for them. 4. Yes, because probably snow and rain would be driven into the entrance, as well as being exposed to cold winds. The best position is to face it S.E.

Bee-Shows to Come.

September 17, at Dumfries.—Annual Show of South of Scotland Bee-keepers' Association. **Entries closed.**

September 17 to 24, at the Agricultural Hall, London.—Honey Show in connection with the Eighteenth Annual Exhibition and Market of the Grocery and Kindred Trades.

October 4 to 7. at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. **Entries closed.**

October 20 and 21, at Kilmarnock.—Honey Show in connection with the Ayrshire Agricultural Society's Show. Liberal prizes. Schedules from John Howie, 58, Alloway-street, Ayr. **Entries close October 7.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Young Bees as Stingers (page 317).—"A. F. L." supposes that a "young bee" is "full of dash and venom." But is this the case? Is a young bee more full of dashes and venom than an old one? I venture to think not. A very young bee, fresh from the cradle, is a helpless sort of creature, and it gradually attains its powers. There would seem to be no economic necessity for its sting, until it takes its place amongst the guards at the gate. (That is, unless it stirs the honey-pots with it!) Whilst as a field-bee its function may be expected to be in full working order. So that it seems reasonable to assume that there could be little diminution in the venom which, as an old bee, it would inject into the stung animal. Whether these things be so, I do not know "for sure," but I will try to find out. I am very familiar with the sting of the "middle-aged bee," and I will experiment with younger individuals duly enraged by disrespect of the infants muling and puking in their nurses' arms; and also with specimens of the lean and slippered pantaloon—tatter-winged bees which are making their last flights before disappearing for ever from the life of the colony, which they have guarded for the little span of their short life.

Limnanthes Douglasii (page 317).—The conflicting evidence as to the nectariferous value of this annual goes to show that subsoil or fertiliser is the key to the riddle. Other plants are not wanting which yield, or withhold, according to location. White clover, for instance, yields well on the chalk, is of less value on the clay, and is a delusion pure and simple on the millstone grit, particularly should the slope face the north. So that *Limnanthes* may only need some constituent of plant-food to justify its reputation. This might easily be discovered if those who make reports would at the same time describe their soil.

Hexamethylenetetramine (page 318).—"A. F. L." uses a little word like that quite casually, just as though he could use a really long one if he were put to it, and if he were out of brevities like "Hex——"! And he appears quite careless of the probability that the unsuspecting compositor leaves a widow and several children, or that the printer has had to pay extra wages to the special compositor who sets this paragraph of protest and who is immune to brain-storms! Just think of it—Hex——! Say it over to yourself a few times. Of course it is quite easy, if you are familiar with it—like Lizarann or Bridgetticks—but suppose that you are not!

Aerial Mating of Queen (page 318).—There is at least one scientist—Dr. Kuckuck to wit—who maintains that mating can take place in the hive itself, but his conclusions have not met with support. There may be no actual physical reason why mating should take place in the air so far as the queen is concerned. But if "A. F. L." will look up the matter he will find that the drone possesses a wonderful arrangement (pneumophysis) which requires inflation, and there is little doubt that the expansion of lung and the process of flight greatly assist the operation.

Effect of Stings (page 327).—It is quite possible that the bee-sting "powerfully affects the motor-centre." Mr. Walker gives the rate he was able to walk, four weeks after being stung, as three miles an hour. I was interested in a case recently, but the victim travelled, so far as I could judge, at the rate of thirty miles an hour four seconds after the inoculation. It is, however, a disillusion to find that motors are affected at all, as I have hopefully anticipated the time when horse-traction would be superseded for the removal of bees. "D. M. M." recently told me that they had been tried this autumn for moor-going in his county with great success.

The Perfect Hive (page 337).—Mr. Heard asks for criticism of his hive, and so I would point out that the omission of filling strips between the walls is a backward step. The cavity thus formed is an inconvenient lodging-place for bees, and the "dead-air-space" is destroyed. It would be better to retain the strips and fill the cavity with cork-dust. Also, the floorboard ventilator is too far forward. What is wanted is not an inlet close to the outlet, but at such a point that the current can be easily conducted up into the hive. The rear of the floorboard is

the place for this. On the whole, I consider it an excellent hive, embodying numerous desirable points. If I lived nearer, it would give me great pleasure to "pull it to pieces" with the designer.

Notices to Correspondents.

*** Mr. D. Hancox, of Deddington, asks us to say that he has received so many replies to his advertisement that he cannot answer all. Stamps sent for samples will be returned as soon as possible, and he hopes that this intimation will prevent others writing him.

H. W. (Darlington).—*Sugar for Bee-food.*—The sugar is unrefined Demerara sugar, and we should not recommend you to use it for autumn feeding. Refined pure cane is much safer, as the Demerara is apt to cause dysentery when bees are confined to the hives in winter.

J. N. (Langwathby).—We cannot say if the sugars you mention are pure cane, and unless guaranteed we should not advise you to use them for bee-food.

F. G. (Bristol).—*Bottle Manufacturers.*—1. Messrs. Breffit and Co., 83, Upper Thames Street, London, E.C. 2. Yes, if specified when ordering.

In Doubt (Mitcham).—*Queen Cast Out of Hive.*—The queen is an old fertile queen. As there are drones still, the young queen will no doubt become fertilised, as the weather is favourable at present.

A. W. (Mauchline).—*Stores for Winter.*—Thirty pounds of stores ought to be enough for a stock when ready for winter, but in view of the present fine weather you had better examine the hive later, when the final packing down is done, as you may find that some of the syrup has been consumed, leaving insufficient for the winter months.

Cheshire.—*Amount of Stores for Wintering—Good Bee-flowers.*—Stocks should be fed until they have about 30 lb. of stores—i.e., eight frames well filled with sealed food. White arabis, *Lymnanthes Douglasii*, borage, crocus, wallflower, winter aconite, and lavender are all useful to the bees as well as being attractive flowers in a garden.

A. W. (Ayrshire).—*Feeding Driven Bees.*—1. From 28 lb. to 30 lb. of sugar should be ample for wintering if the bees were put on to drawn-out combs: if not, they will require more, and you should have fed them with a bottle-feeder for some time after they were hived. In spring feed slowly, using about two holes in the bottle-feeder, till the flowers begin to bloom. 2. Give them the syrup now as quickly as they will take it.

Welshman (Bangor).—*Beginner's Queries.*—1. Excluder should be left on the hive when wintering with super in position. 2. Carefully follow the recipe given on page 195 of "British Bee-keepers' Guide Book." 3. It looks very much like queenlessness, but the queen may be all right. Examine and see if you can find eggs. 4. No; you must put the divided lots of bees into separate hives. If you followed the plan you propose they would join together.

Hopeful (Norwich).—*Winter Food for Bees—Rendering Old Combs.*—1. Although bees can be wintered on candy, it is better for them to have stores in the combs. As you live some distance from your bees, your best plan will be to get a large rapid-feeder holding about one gallon of syrup, and in this way you can give as much as they require in about three journeys. 2. There is always a considerable amount of refuse from old combs, on account of the cocoons of the larvæ adhering to the cell-walls each time the brood hatches out. It was not a bad result to get 2 oz. of wax from one comb.

Humilus (Crawley).—About a teaspoonful of powdered sulphur will be best. To make it burn mix a little saltpetre with it.

W. W. (Troon).—*Name of Flower.*—The plant is *Melilotus albi.* It is a common weed in Southern Europe and Asia, and is occasionally found in Great Britain, probably imported with corn or ballast. Flowers late in summer.

J. A. (Finsbury).—*Duplicate Eggs in Cells.*—Sometimes, when a weak colony has a young prolific queen a large number of eggs will be found in some of the cells. There is nothing further wrong.

D. T. (Renfrew) and Johnston (South Shields).—*Suspected "Isle of Wight" Disease.*—The bees are suffering from digestive trouble. Try feeding with warm medicated syrup.

Honey Samples.

E. M. (Bucks).—Medium-coloured honey of good flavour and aroma, not quite first-class owing to its being rather thin. From mixed sources, largely sainfoin. Worth showing in local competitions.

H. B. R. (Congleton).—Honey of good flavour, but lacking in density. Gathered from mixed sources, mostly clover. No trace of heather.

Italians (Runcorn).—Sample is a beautiful clover honey, very good in flavour, colour, and consistency.

Enquirer (Ellesmere).—A thin, light honey of fairly good flavour. It is in

rather unripe condition. It is quite palatable, and might be used for the table or fed back to the bees. We should advise boiling first if used for the latter purpose.

J. D. (Denbighshire).—No. 1 sample is rather dark in colour, exceptionally thick, and has a peculiar taste as if tainted with the subjugator used when removing from the hive. Nos. 2 and 3 are both very good honeys in colour, consistency, and flavour. Both are suitable for showing. No. 2 is a shade better in colour.

E. S. (Cambs).—No. 1 is rather thin and unripe; not good enough for a show honey. No. 2 is fairly good in colour and flavour, and shows signs of granulating with a nice smooth grain. It might be worth showing in a local competition, but not quite up to a first-class show. No. 1 about 45s. and No. 2 50s. cwt. in bulk. Gathered mainly from sainfoin.

M. N. (Middlesex).—A very nice honey, quite good enough for showing. Should be entered as a medium-colour honey.

E. T. (Liverpool).—Good light clover honey; would have been better if left a little longer in the hive to ripen, as it slightly lacks density. Of course the best method of getting honey out of the comb is to use an extractor; but if you cannot get one you can only melt down the combs, taking care not to make the honey too hot, or it will lose its delicate aroma and flavour.

Suspected Comb.

G. A. (Berks).—Comb is affected with foul brood, now in spore stage.

A number of letters, &c., are held over till next issue owing to pressure upon our space.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½ in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

YOUNG BLACK QUEEN FOR SALE, 2s. 6d.; also will exchange Canaries and British Finches for Honey.—H., 58, King Edward's-gardens, Acton, W. d 47

Special Prepaid Advertisements.—*Continued.*

WHAT CASH OFFERS? New 10-Frame "Observatory" Hive, painted, calico roof, glass dummies, sides protected by calico blinds, riser, rack.—L. HACK, Holmwood, Surrey. d 44

GOOD SECTIONS FOR SALE, Down Honey.—Apply, J. STONE, Shrewton, Wilts. d 46

WANTED, at once, "Cowan" Extractor, in good condition, reversible cages. Lowest price, f.o.r.—F. NORMAN, Spaxton, Bridgwater. d 43

FEW CWTS. HONEY, medium, 60s.; light, 70s. —FRANCIS, 32, Regent-road, Great Yarmouth. d 41

FOR SALE, 4 strong Stocks, in "W. B. C." Hives, 30s. each.—Lutton Rectory, Oundle. d 38

FOR SALE, 4 Hives, almost new, £1, or exchange for Honey.—G. HOUGHTON, Peel-street, South Normanton, Alfreton. d 40

DRIVEN BEES, with young Queen, 3s., in non-returnable boxes.—WADEY, Broadstone. d 39

MUST CLEAR.—7 Stocks, 8 Frames each, with or without Hives, Blacks 22s., pure Carniolans 25s., without Hives 5s. less.—BEVAN, 44, Abbey-road, Croydon. d 37

SECTIONS WANTED, light colour, first grade, for prompt cash. Quote price and quantity.—COOK, Torwood, Ashford, Middlesex. d 36

STRONG STOCK OF BEES, cheap, young Queen, on 8 Frames, joiner made Hive, plenty of stores. Seen at 85, Copelston-road, Denmark Park, Peckham, S.E. d 35

EXTRACTED HONEY WANTED, any quantity bought for spot cash, and receptacles sent for it.—SPRING AND CO., LTD., Brigg, Lincs.

OVERSTOCKED.—I offer quantity of appliances, Hives, drawn Shallow Combs, Extractors, &c., cheap; also few stocks of Bees. List free on application.—W. H. SIMS, Hall Green, Birmingham. d 34

GOOD LIGHT-COLOURED SECTIONS WANTED.—R. CARTER, Chartridge, near Chesham, Bucks. d 19

BEST SCOTCH AND WELSH SECTIONS FOR SALE, 10s. 6d. per dozen.—C. GARFITT, Coupar Angus, Perthshire. d 14

GEARED EXTRACTOR, 14s. 6d.; healthy Stocks Bees, Cowan Hive, 25s.; others, £1; Standard Frame Nucleus Hives, painted, 2s.; Louis cycle, good, lady's, 25s. Exchange for Honey.—BEECROFT, Abbott's-road, King's Heath. d 18

CROCUS BULBS, 100 1s.; Arabis plants, dozen 6d.; free.—BRAYSHAW, Aultmore, Keith. d 29

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Who is the Original Discoverer of the Frame and Bar?—Dr. v. Büttel-Reepen makes an interesting contribution on this subject in the *Bienenwirtschaftliche Centralblatt*. He traces the origin of the bar to the Orient, where it was in use for centuries in connection with straw hives. Della Rocca in 1790 adapted this to wooden box hives, and later Wurster and Wunder. As the latter was a simple forester, who perhaps had no access to books to know what had been done previously, it is probable that the idea was original with him. Subsequently Dzierzon, in 1845, adopted and popularised the bar. The discoverer of the frame was François Huber, who in 1792 brought out his work, "Nouvelles observations sur les abeilles," in which he illustrated and described his leaf hive. This frame was subsequently improved by S. Morlot in 1840, who did away with part of the bottom bar and kept the frames together with hooks. Dr. v. Büttel mentions those who brought out different patterns of frames: Prokopowitch in 1812, Nutt in 1832, Munn in 1844, Jähne in the same year, Debeauvois in 1859, Silenius in 1851. These were all modifications of the Huber frame. To the above names may be added that of Feburier, who wrote a treatise on bees in 1810, in which he illustrates an observatory leaf hive, which he says is a modification of the Huber hive. None of these frames, however, were of any practical utility, and it was not until 1851 that Langstroth introduced the first really practical movable frame. Berlepsch also not knowing of Langstroth's improvement, and working with the Prokopowitch frame in his mind, added the side and bottom bars to Dzierzon's bar, and produced the first practical German frame. It was to these two independent workers that the present extension of the movable comb hive is due. In this connection the name of Mr. Woodbury and some others might be mentioned as having contributed towards the improvement of the bar and frame. Huber was therefore the inventor of the frame, while Langstroth and Berlepsch improved it and made it of practical utility.

A Well-merited Rebuke.—An amusing incident is mentioned in *L'Apiculteur*. It seems that in an article entitled "Journal d'un jeune Apiculteur" there appeared in that journal an illustration after the one in the English journals, showing how to prevent the roofs of hives from being blown off during storms. The illustration will be quite familiar to our readers, and the editor correctly states that he had seen it in the BRITISH BEE JOURNAL as well as in the *Irish Bee Journal*. This was why he stated that it was taken from the English journals. This, however, has raised the ire of the Rev. J. D. Digges, the editor of the *I.B.J.*, who has protested that the source from which the illustration had been derived had not been properly acknowledged. We sympathise with M. Sevalle when he says that if he protested every time an article or an idea was taken from *L'Apiculteur* his correspondence would be greatly increased, for ours would also for the same reason. As far as the BRITISH BEE JOURNAL and *Record* are concerned, *L'Apiculteur* was perfectly correct, for the idea originated with, and was first described and illustrated in, these papers in 1890, and has at intervals appeared many times since. Mr. Digges copied the idea and gave an illustration in the *I.B.J.* for the first time in December, 1902, without making any acknowledgment of the fact that it had already frequently been illustrated in these papers and was their copyright. Furthermore, it is interesting to note that he introduced the same illustration in the compilation of the "Irish Bee-Guide" in 1904, without any allusion as to its source. Mr. Digges is such an adept not only in blowing his own trumpet, but also in getting others to do it for him, that it is refreshing to read the well-merited rebuke administered to him by the editor of *L'Apiculteur*. The editor concludes by saying: "We think what has angered Mr. Digges is the fact that we also reproduced from his journal the little echo relating to the residence of M. Maeterlinck at Saint Wandrille. The reflections which we allowed ourselves to add perhaps did not please him, *inde iræ*." *Risum teneatis amici?*

THE GROCERY AND ALLIED TRADES' EXHIBITION.

HONEY SHOW AT THE AGRICULTURAL HALL.

The eighteenth International Exhibition of the Grocery and Allied Trades was opened on Saturday, 17th inst., and will continue till Saturday, 24th inst.

When one stands and views the enormous display of honey, it seems scarcely possible to realise that the season has been a failure; yet this is brought home very clearly by the number of applications for honey received during the show, not only from traders, but from bee-keepers who are unable to fill their usual orders from their own apiaries.

This year the honey display is shown to much greater advantage, a better and more compact arrangement being effected than is usually possible. As an education to

traders in dealing with honey these exhibitions have been invaluable, and as they are carried out on purely trade lines, grocers, dairymen, and others are able to enter into competition with the produce they have purchased, and so obtain what is of great value to them in disposing of the goods—prize cards in their own names.

Foreign honey is very much in evidence on the stand of Messrs. Spring and Co., of Brigg, and South Australia has again a large display, which is retailed at 6d. per 1-lb. jar. No doubt, through the great scarcity of the home-grown article foreign honey will secure a larger sale than usual, but after all the consumer prefers home produce when he can obtain it. As one purchaser of Australian honey remarked, "It is very rough and coarse to the palate after being accustomed to English."

To those readers who are unable to visit the exhibition a short description of the classes will, no doubt, be of interest. That for a beginner's outfit is better filled this year, four exhibits being staged. These were a source of constant inquiry, although it is the end of the season. Six fine trophies are shown in the class for these, and they make an imposing display, being all staged on one table; while the tasteful and attractive manner of arrangement and the good quality of the honey no doubt caused the judges some little trouble in deciding on their respective positions in the list of awards. The first-prize trophy showed the variety of uses in food and medicine to which honey can be put in articles of every-day consumption, and it is questionable if a more practical and instructive exhibit in this particular respect has ever before been staged at a London show.

The classes for light and medium coloured honey are well filled, the former containing sixty exhibits, against thirty-eight last year. The class for dark honey has but eight entries, against nineteen last year. There is also a great contrast in the quality, as no honey-dew is present, while last year nearly every exhibit was tainted with this undesirable product. Dark honey seems to be very scarce this season. The light-honey class is a magnificent sight, the colour varying very slightly throughout. Exhibitors now grade their honey much better, and very few exhibits have to be disqualified for being entered in the wrong class.

Heather honey was again well represented, and it is a pleasure to see that North-country bee-keepers are coming to the front at the Southern shows. This is as it should be, for Southern bee-keepers have for many years been consistent exhibitors at Northern shows.

The classes for sections were well filled, but here several splendid exhibits did not conform to the rules with regard to lacing. It is a remarkable thing that exhibitors never err on the side of leaving more than the 3½-in. comb-face required, and for which there is no penalty; yet frequently we see sections so good that every cell should be exposed disfigured with too broad an edging. In one case the paper overlaps quite ½ in.

The beeswax classes still keep up their reputation, and in the class for sale purposes the entries number fourteen. We are pleased to notice a great improvement in the methods of staging. Wax judged for quality has eighteen entries—an increase of two on last year. Here again the quality is very good, and there are several new exhibitors who have made a very creditable display.

The granulated honey class, as usual, is better filled at this show than at any other in the kingdom, sixteen exhibits being staged, all of fine quality. There are but three entries in the class for shallow frames, but, considering the season, this is not surprising. All are of good quality, being well filled and sealed.

Mr. T. W. Cowan and Mr. E. Walker undertook the onerous work of judging, and made the following awards:

Outfit for a Beginner in Bee-keeping.—1st, Jas. Lee and Son, 4, Martineau Road, Highbury, N.; 2nd, E. H. Taylor, Welwyn, Herts; 3rd, Mrs. Seadon, Bromley, Kent.

Display of Honey and Honey Products, shown in Suitably Attractive Form for a Tradesman's Window.—1st and B.B.K.A. silver medal, A. S. Dell, County Apiaries, Leigh, Lancs; 2nd, C. W. Dyer, Compton, Newbury, Berks; 3rd, J. Pearman, Penny Long Lane, Derby; 4th, Mrs. Turner, Broadway, Amersham; v.h.c., Messrs. Jas. Lee and Son.

Twelve 1-lb. Sections.—1st and B.B.K.A. bronze medal, J. Pearman; 2nd, A. W. Weatherhogg, Willoughton, Lincoln; 3rd, C. W. Dyer; 4th, R. H. Baynes, 51, Bridge Street, Cambridge; v.h.c., W. J. Norman, Harpley Mills, King's Lynn; A. Hiscock, Loddington, Kettering; h.c., J. D. Softly, Great Massingham, Norfolk; C. A. Wood, Colewood House, Mitcham Junction; G. W. Bullamore, Albury, Herts.

Twelve 1-lb. Sections Heather Honey.—1st, J. Pearman; 2nd, T. Marshall, Ivy Cottage, Sutton-on-Trent; 3rd, A. Young, 34, East Street, Chatham.

Three Shallow Frames Comb Honey.—1st, Jas. Lee and Son; 2nd, E. C. R. White, Newton Toney, near Salisbury; 3rd, Miss E. H. Smiles, Wilmington, Dartford.

Twelve 1-lb. Jars Light-coloured Ex-

tracted Honey. — 1st and B.B.K.A. certificate, H. R. Millington, Wistanswick, Market Drayton; 2nd, R. H. Baynes; 3rd, Dr. T. W. Elliot, The Old Rectory, Southwell, Notts; 4th, J. Berry, Llanrwst, North Wales; 5th, A. C. Jackson, 103, Chalk Hall, Elvedon, Notts; v.h.c., P. M. Ralph, Settle, Yorks; L. W. Matthews, Great Rollright, Chipping Norton; J. Boyes, Bridge Street, Cardiff; Jas. Lee and Son; h.c., J. D. Softly; A. S. Dell; A. S. Hoare, Trevollard, Saltash; c., W. J. Norman; G. W. Avery, Heads Nook, Carlisle; T. Owen, Llanchan, Colwyn Bay; R. W. Lloyd, Thetford, Norfolk; W. T. Gunter, Plas Hen, Glam; Mrs. A. Turner.

Twelve 1-lb. Jars Medium-coloured Extracted Honey.—1st, W. Wells, Uppington, Stamford; 2nd, J. Herrod, Sutton-on-Trent, Newark; 3rd, A. Hiscock; 4th, R. H. Baynes; v.h.c., J. Pearman; T. Owen; T. A. Jones, Halkyn, Flints.

Twelve 1-lb. Jars Dark Extracted Honey.—1st, G. Marshall, Norwall, Newark; 2nd, Mrs. A. Turner; 3rd, A. Wood.

Twelve 1-lb. Jars Heather Honey.—1st, J. Pearman; 2nd, A. Young; 3rd, G. Hunt, Newark, Notts; v.h.c., H. Waddington, T. Marshall; h.c., A. Baines, Guildford; J. Berry.

Twelve 1-lb. Jars Heather-blend Honey.—1st, J. Woods, Nettleworth Manor, Mansfield; 2nd, T. Marshall; 3rd, J. Herrod; 4th, A. G. Pugh, Beeston, Notts; v.h.c., P. M. Ralph and W. Holmes; h.c., Dr. T. W. Elliot and A. Baines.

Twelve 1-lb. Jars Granulated Honey.—1st, T. Marshall; 2nd, R. Allen, Tusmore; 3rd, E. Church, Masonic Temple, Cardiff; 4th, A. W. Weatherhogg; v.h.c., Jas. Lee and Son, R. Holbarrow, and G. Marshall; h.c., W. Patchett, Cabourne, Caistor.

Beeswax in Cakes (quality of wax, form of cakes, and package suitable for retail counter trade).—1st, Goodburn Bros., Millfield, Peterborough; 2nd, J. Berry; 3rd, F. Harris, High Ferry, Sibsey; 4th, E. C. R. White; v.h.c., R. D. Frusher, Swiss Apiary, Crowborough, and J. Pearman; h.c., A. Hiscock.

Beeswax (judged for quality of wax only).—1st, J. Pearman; 2nd, Goodburn Bros.; 3rd, J. Wilson, North Clifton Hall, Newark; 4th, E. C. R. White; v.h.c., L. W. Matthews; h.c., J. Berry; c., R. Holbarrow.

HONEY SELLING CLASSES.

Extracted Honey in Bulk.—Certificate, A. Wood, Mitcham Junction; certificate, Mrs. Matthews, 40, New Road, Pwllheli.

Extracted Honey in 1-lb. Jars.—Certificates of merit awarded to: J. Nicholson, Langwathby, Cumberland; W. Patchett, Caistor, Lincs; J. Rowlands, Maes Apiaries, Pwllheli; H. C. Barlow, Hartshill Road, Stoke-on-Trent.

1-lb. Section of Comb Honey.—Certificates of merit to: P. Dickenson, White Heather Apiary, St. Ives, Hunts; W. Robson, Roundhay, Leeds; J. Rowlands.

ABERDEENSHIRE B.K.A.

ANNUAL SHOW.

The first annual show of the Aberdeenshire B.K.A. was held in conjunction with the Royal Horticultural Society at Aberdeen on August 25, 26, and 27. There was a large number of entries in the section and extracted-honey classes, but owing to adverse weather the heather exhibits staged were not so numerous.

Some very fine samples of beeswax were shown, and a number of observatory-hives added greatly to the interest of the visitors. Mr. John Hall, Echt, gave practical demonstrations on honey extracting during the show, and Mr. A. Manson gave lectures on bee-keeping, the honey section proving of great interest to bee-keepers and to the public in general. Mr. D. M. Macdonald, F.E.I.S., Morinsh, acted as judge and made the following awards:

Six 1-lb. Jars Light Honey.—1st, John Clark, Lumphanan; 2nd, John Hall, Echt; 3rd, John Beverley, Culter.

Six 1-lb. Jars Heather Honey.—1st, W. Moir, Grange Station.

Six 1-lb. Sections Heather Honey.—1st, W. Moir; 2nd, John Hall.

Three 1-lb. Sections Heather Honey.—1st, W. Moir; 2nd, John Hall.

Six 1-lb. Sections other than Heather.—1st, Alec Low, Newmachar; 2nd, John Hall; 3rd, W. Moir.

Three 1-lb. Sections other than Heather.—1st, John Hall; 2nd, John Clark; 3rd, Alec Low.

Two Shallow Frames.—1st, Alec Low; 2nd, John Hall.

Super of Honey.—1st, W. Kennedy, Echt; 2nd, Alec Low; 3rd, John Hall.

Display of Honey and Beeswax.—1st, George Milne, Ellon; 2nd, Alec Low; 3rd, John Hall.

Beeswax. — 1st, W. Moir; 2nd, A. Manson; 3rd, George Milne.

Honey Cakes.—1st, George Milne; 2nd, R. McGregor, Aberdeen; 3rd, Mrs. Burgess, Newmachar.

Observatory-hive. — 1st, John Hall; 2nd, R. Bain, Kingswells; 3rd, Alec Low.

Extra Prize Best-filled Straw Super.—Alec Low.

Extra Prize 1-lb. Section.—George Milne.—ALEC LOW, Joint Secretary.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7916.] Again we are nearing the close of the bee-year. Autumn has commenced, and once more as we tot up the results of the season we feel that our hopes have not been realised, but, putting aside our disappointment, we must prepare to lay the foundations for our next year's work. Because 1910 has been a poor season we must not lose heart; perhaps 1911 may equal any of the good years that lie behind, and it will be those who get their bees into good condition now to stand the winter who will reap their reward next season. We older members of the craft can remember other times, when a succession of good seasons gladdened our hearts instead of a succession of bad ones —years in which our hives secured big, heavy supers totalling 100 lb. in weight. Therefore I say, do not let us lose heart in our endeavour to do well, and I believe the reward will come in a cycle of good seasons, when those big ice-floes or icebergs we hear about have melted or have returned to the Arctic regions. Preparation for next year means, I fear, a big feeding up now, and the sooner it is done the better. I have been busy feeding during the past fortnight; some stocks have taken 6 lb. of syrup during the twenty-four hours, a 3-lb. jar in the evening and another in the morning of good thick syrup. My rapid-feeders are all cheap ones, made as follows: Take either a 2-lb. or a 3-lb. jam jar, a square piece of tin cut $\frac{1}{2}$ in. to $\frac{3}{4}$ in. wider than the mouth of the jar (a slotted divider will cut into three such pieces), then with a hammer curl over two of the sides so that the curled edges will clip on the lip of the jar's mouth. See that it fits quite tight all over the mouth of the jar; now punch some small holes (the point of a wire nail will do the job nicely), cut a 2-in. hole in a piece of odd board, $\frac{3}{8}$ in., $\frac{1}{2}$ in., or $\frac{3}{4}$ in. thick and 5 in. or 6 in. square; place this feeding stage over the feed-hole in centre of quilt, fill your jar with syrup, put on the tin cover, invert on the board, and the bees will quickly take the syrup down through the small perforations; total cost of each about 2d. Always wrap up the feeders with some soft, warm material, and when removing the jar to refill, a piece of glass can be placed over the hole in the stage to confine the bees: this slides off as the full jar is returned to the hive.

The "Herrod 'Apicure.'"—I hope those bee-keepers who have used this "cure" will give our readers the benefit of their experience. I notice as one of its advertised points that no wax-moth can live where it is used. This is of great importance to bee-keepers, as the wax-moth pest is far more widespread than foul brood—at least in this county.

Does the shortage of the crop this season make any difference in the price of honey? I must say I have been disappointed that we have had no authoritative pointers from our Editor on this matter. If the B.B.J. were to become more of a trade paper—more helpful to the isolated bee-keepers in quoting current London and provincial prices of honey, both wholesale and retail—its value in the bee-world would be very much enhanced. I have in my small way helped the bee-keeper with advice in producing honey, but the fact that after it has been produced the bee-keeper is often at a loss to find a market for his surplus ought to be dealt with by our central authority. If good sections are retailing in London at 1s. to 1s. 3d., the country bee-keeper should secure more for his honey than in a plentiful year when it is retailed at 8d. to 10d.

Foul-brood Legislation.—I have not referred to the matter this week, although I have received letters from all parts of the country on the subject, including some from "D. M. M.'s" neighbourhood, strongly opposing legislation for bee-diseases.—W. Woodley, Beedon, Newbury.

[Unlike America, where the large quantity of honey produced enables a market quotation to be given, the supply in this country is so uncertain that it is impossible to give quotations, much as we should like to do so. If Mr. Woodley can tell us where to obtain *reliable* information, we shall be only too pleased to publish the same. As a large producer and disposer of honey, no doubt he himself is in a position to give us a good idea of current prices.—Ed.]

THE NEW DISTEMPER OF BEES.

SULPHUR AS A REMEDY; AND SOME CASUAL NOTES ON OTHER MATTERS.

[7917.] It was not my intention, in the present state of our knowledge regarding this malady, to put forward any theories or suggested remedies until such time as the feasibility of such should have some firmer base to rest upon than mere conjecture. But as Mr. Simpson (see page 348, B.B.J., September 1) has let the cat

out of my bag, and as the editorial footnote thereto seems to imply that someone is talking without his book, I am constrained to come into the arena.

Whilst I cannot speak from actual examination of the case to which Mr. Simpson refers, the symptoms are so absolutely foreign to the malady designated "bee-paralysis," and so absolutely symptomatic of the new distemper, that there is no doubt whatever in my mind in diagnosing it as the latter. "Bee-paralysis"—a misnomer, like most of our bee-disease terminology ("bee-palsy" would be more appropriate)—comes on, so far as my experience with it goes, in late autumn, and disappears of itself in the following spring, leaving the attacked colony much weakened. It is a very minor trouble to bee-keepers in this country. The new distemper, on the other hand, is a very serious menace, usually arising with a swarm and showing itself from ten to twenty days after the swarm is hived, whilst the parent colony shows signs of infection some three days later; and these symptoms are so clear-cut as regards the malady in Bucks that I feel able to speak with absolute confidence as regards Mr. Simpson's case.

Being on a lecturing tour when the malady first came under my immediate notice, I had no time for more than a very superficial investigation, and I was led to recommend sulphur with the idea that it might prove beneficial should there be some external fungoid parasite as the causal agent or as an accessory thereto, and in the apiary where this was put to trial upon a very bad case, every colony out of twenty-one succumbed except this particular one. Very unfortunately this weakened colony was put out of existence this spring, the owner being wishful to avoid any stray chance of infection among the new colonies he provided himself with for a fresh start. Thus terminated, untimely, an experiment which promised much, and I have had to start afresh. The malady having considerably extended its ravages this season opportunity has been afforded of further experiment, and the remedy is being more extensively tried this year. All that can be said at present is that not a single colony has succumbed where sulphur has been used; but it is too early to speak with confidence, and I am afraid that Mr. Simpson is too sanguine of cure, though I sincerely hope he may be right. We have yet to "wait and see"; for, "according to rule," in Bucks the malady, if it does not exterminate the colony at the first attack (as it has done in so many instances), seems to disappear after about three weeks, only to reappear in aggravated form about the end of September or early in October; and if the sulphur-treated stocks should survive the second attack, and come through the winter alive whilst untreated ones succumb, then, *and only then*, will it have been demonstrated that sulphur *may be* of use. Its value at present is not proven.

Mr. Simpson evidently did not completely digest my instructions. I directed that all the bees should be shaken from the combs into the hive, and that then they should have their jackets well dusted with flowers of sulphur applied with a small bellows such as gardeners use for greenhouse work, or else by beating with the hand a muslin bag containing the sulphur. The combs were then to be returned; and the operation was to be repeated three or four times at about three-day intervals. When this proceeding has been followed the brood has been saved, and considering the weakened condition of a colony that may have daily been losing hundreds, if not thousands, of bees the saving of the brood is important. I have been closely studying the malady for some fifteen months, and something like a thousand colonies have disappeared in Bucks, so that many are hoping for some remedy to stay the plague. Various experiments are being tried under my direction, and if anything results that will be of service to the craft it will soon be made known. Meantime not a tithe of what ought to be done is being done.

While it does not do to be too dogmatic in anything concerning a malady about which so little is known, the conclusion I have come to is that it is not contagious, and my verdict upon the one case referred to by Mr. Crawshaw on page 349 (B.B.J., September 1) is "Not proven, and most likely not true."

The idea, too, of the immunity of any particular strain of bees should be accepted with the greatest reserve. Personally, I know of one colony that came through an outbreak unscathed, whilst its nineteen fellows went to destruction at a gallop. This was a colony of natives; and the only other colony in the village that was not wiped out of existence was also native. I know of colonies headed by Italian queens that held out slightly longer than natives in the same apiary, but eventually went, and the same thing occurred with a colony headed by a queen of the strain mentioned. I have for some years been recommending bee-keepers to shun the yellow races of bees as they would the plague, and I am not inclined to alter my advice in this connection according to what I have seen at present. I had the first "golden Italians" that came to this country, and I dare say my queen-raising exhibit at the Dairy Show of 1900 will be remembered by some; but whilst I included them by way of novelty I was very careful to advise all inquirers to have nothing to do with them or any other

foreign race; and to that advice I adhere now. Our native bee, *properly selected*, will beat anything foreign out of sight in every desirable feature. And this is the conclusion that every experienced bee-keeper arrives at sooner or later.

Bee-forage.—As regards epilobium as a bee-plant (page 357), I have never seen a hive-bee upon it, though it is very abundant in many parts. And up to last year I could have said the same of golden-rod, though both these plants are esteemed as yielders of abundant nectar in the States; but both last year and this the latter is being freely worked by bees. I have also yet to see a bee gathering pollen from the Hazel, though reports of bees frequenting it have appeared in this journal. All of which goes to prove that soil and climatic conditions have a great deal to do with nectar secretion. What yields in one season and in one locality may fail to yield in all, or but poorly, in less favourable circumstances.

Bee-stings and Rheumatism.—As exemplified in my own personality, bee-poison, of which I have had, and still get, my share, neither gives nor prevents rheumatism. On the principle of "any port in a storm" I might be inclined to recommend the remedy in the case of an "incurable," but for slight cases I should be inclined to consider the remedy as bad as the disease. In all cases it should be remembered that what is one man's food may be another's poison.—H. EDWARDS, Reading.

FOUL-BROOD LEGISLATION.

AN OPPONENT'S VIEWS.

[7918.] As the discussion on the above in your columns appears to be developing into a duel between Messrs. Avery and Macdonald on the one hand and Mr. Woodley on the other, perhaps you, with your usual courtesy to your clientèle and love of fair play, also in deference to the wishes of Messrs. Woodley and Crawshaw, will allow one whose sympathies are more inclined to the Woodley view of the question to say a word at this stage.

The "dread of the something after—that makes us rather bear the ills we have than fly to others that we know not of," as Hamlet says, has so far deterred me from assisting in doing that which may ultimately turn out to be placing a rope round our own necks.

Prosecutions.—I feel sure the number of Otaki (New Zealand) bee-keepers who have just been fined by a magistrate for keeping bees in other than frame-hives (page 243) are, to say the least, not "crying now for legislative suppression," if they did so before, as "D. M. M." says they were doing.

Straw Skeps.—In the Irish statistics, got together by the Constabulary in 1904, there were 11,433, or nearly one-half of the total number of stocks of bees in Ireland, in other than movable-frame hives, which produced 106,699 lb. of honey alone. What a happy hunting-ground there would be here for a New Zealand expert inspector to wipe out practically half of the bee domiciles of Ireland, belonging to the poor Irish cottagers. Luckily for these, Mr. T. W. Russell and his few friends, who rushed this Act through Parliament between June 18 and July 31, 1908, did not go so far as this, though the later regulations have gone a little further, and provided that, "if necessary for the proper examination of comb in a fixed-comb hive, the inspector may cut out a portion of the brood-comb." The removal of *all* the brood-comb is the only common-sense plan that would make any inspector's certificate worthy of the name. I have driven skeps, twenty-one days after sending out a swarm and cast, that had cells of foul brood, which I would defy any inspector, however expert, to test or even see without removal of combs.

The poor Irishman also who gave the authorities some difficulty the other day in securing his compliance with their notice requiring the destruction of his bee-possessions, and found the "mailed fist" about to strike, does he exclaim, with "D. M. M.," "Happy Erin!"? I think not.

Over-legislation. — England, without doubt, suffers from over-legislation already, but the remedy suggested in one of the popular weeklies last week, that Parliament should be shut up for the next ten years, would be too drastic, and could be better applied to the political chaos prevailing in America, where in some States the law regulates nearly everything except the planets and the weather.

Mr. Holterman has said many things besides the quotation given by "D. M. M." on page 324. For instance, I give three extracts from a letter of his that appeared in the B.B.J. on February 2, 1905: (*a*) "The Foul Brood Act we have is better than the work done under it." (*b*) "The association and the Government also have been guilty of the unfair practice of publishing the inspectors' reports and suppressing criticism thereon." (*c*) "One cause of the inactivity in the matter is fear of the inspector. The latter goes about the country at Government's expense, and can make and unmake reputations in a very short time. This has been frankly stated to me by men who said I was right, but were afraid of the injury that might be done them."

I remember reading a reply of Sir E. Strachey to a question in the House of Commons a short time ago *re* American blight on apple-trees, in which he stated that "The attention of the Board of Agriculture had been called to the serious increase of American blight, but the Board hoped that the spread of education among the fruit-growers, together with the existing facilities for washing trees, would result in a diminution, without resorting to *extreme measures of coercion*."

Here is a perfectly analogous case, and a somewhat similar reply, with a slightly different wording, might, I think, very well be given on the foul-brood question—*e.g.*, insert after "spread of education among," "bee-keepers, together with existing facilities possessed by county and local associations of bee-keepers, the B.B.K.A. and its numerous experts of all classes, and the 'simple, clean, and efficient' Herrod Apicure from the B.B.J. offices, would result," &c.

Necessity for Legislation. — I am glad that the Board insist on getting evidence that there is a real need for legislation before proceeding in the matter, and if they will look up the annual reports of associations that have appeared this year in the bee-journals they will find ample evidence of low percentages of disease, also decreases on previous years, and not a single instance in which it has got beyond control.

I do not place foul brood in the same category as swine fever, rabies, and anthrax; neither do many other large apiarists. They are not analogous diseases, as swine, dogs, and cows do not fly, and can be isolated; but should the "Isle of Wight disease" spread, and prove to be as dangerous as it appears, then, and not till then, should the Board of Agriculture step in and take the necessary steps to meet the danger, and I personally shall be quite willing to leave the matter in their hands.

Should an Act be passed, how do we know that it will be carried out? Take the Irish Act, for instance. Three county councils have not taken any steps whatever to put the Act into force. Five Irish counties have not made any provision whatever for compensation: others have set aside a sum as low as £4. The whole sum set aside throughout Ireland is only £342, equal to the value of 2,736 straw skeps at half-a-crown each (the amount allowed under the regulations).

Infected Honey.—I can give you a personal experience of infected honey which I had a few years ago. It is my practice to leave all my shallow-frame supers on the hives until the end of the season. That season I took off about twenty supers one Saturday, and extracted the honey at once, straining the same into a ripener holding between 4 cwt. and 5 cwt. On looking through the brood-frames of these stocks a few days later I found one stock, which had gathered a large surplus, with a few cells of foul brood in the advanced stage. The honey was in the ripener (with the rest), the whole being worth to me at least £20. Another half-ton or more, worth £40 to £50, went through the same extractor before the end of the year. What would be my position under the Irish Act on the visit of the inspector? The Act says, "infected articles"; regulations say, "articles means honey," &c. Being a truthful, law-abiding man, of course, I should be obliged to accept his notice-form, which commences: "Dear Sir,—You are hereby requested, within three days, to destroy," &c. I then turn to the Irish regulations, and find: "Destruction means destruction by *burning*." I can picture the conflagration, and also my own disappointment when applying for compensation to find that this County Council does not provide for any. I expect "Country Parson," in your issue of June 23 last, would be in a similar plight.

The F.B. Committee.—It is stated that the Foul-Brood Act Committee lately appointed is strong and representative. Yes, I agree to both terms as regards scientific, paid expert, association secretary, and man-of-leisure bee-keepers, but weak and unrepresentative indeed as regards the Woodley and cottager type of bee-keeper.

I would suggest to Mr. Woodley that he look up the letters of his 299 supporters in 1904, and communicate with some of them, with the object of forming a strong and representative committee to promulgate their views.

The postal ballot will, as usual, prove a farce so far as obtaining the real feeling of bee-keepers is concerned. Only the few enthusiasts will take the trouble to reply, plus the paid experts' protégés. I expect the Board officials will scrutinise the signatures as keenly as our Revising Barristers do.

Perhaps I ought to add that the references in my letter to the Irish Act and its effects are authentic, as I am indebted for them to two friendly M.P.s, who obtained them for me from the Irish Board of Agriculture.

I am not sure that I am doing wisely in entering into this controversy for the first time, as it may possibly meet with the "What rot!" of some elegant writer; but anyhow, Mr. Editor, I can assure you that I am perfectly honest and sincere in my convictions, which are simply those of a practical common-sense bee-keeper, if I may say so, of the Woodley type.—

HERBERT SAMWAYS (Second-class Expert), Carmarthenshire.

[Since Mr. Holterman wrote in 1905 he has seen the benefit that the industry has derived in Canada from legislation, and has therefore become a convinced advocate of it. The Board of Agriculture have been for some time teaching fruit-growers how to wash trees and get rid of American blight, but very little progress has been made. We speak feelingly, for we live in an apple-growing district, and although we take great pains to wash and spray trees, there are no others round us who do so or will go to the expense, with the consequence that American blight is constantly breaking out, and we have to fight it during the whole season, at considerable cost to ourselves. We shall never be able to produce paying crops of good fruit until some means is taken to compel careless and slovenly fruit-growers to destroy these pests. Our correspondent will allow us to point out that it will be entirely the fault of bee-keepers if they do not take the trouble to express their wishes. The purpose of the committee is to ascertain the real feeling in the country with regard to foul-brood legislation, and if there are bee-keepers who are opposed to it they should let it be known. There is no desire to force a measure of this sort, and it could only be carried if there was an evident demand for it. If the postal ballot turns out a farce, as our correspondent suggests, it will only show the apathy of bee-keepers and how little they care for the industry.—ED.]

UPWARD COMB-BUILDING.

[7919.] The experience of Mr. B. Smith (7911, page 367) and the accompanying photograph are certainly interesting, but I think an explanation of the bees' behaviour in this case may be traced to the rain which, we are told, had fallen in the night. This, falling on the branch, would run to the under-side, and, owing to the position of the branch, much of the water would make its way towards the axis, and consequently into the cluster, which would render building downwards an impossibility.

The upbuilding of comb, however, is not such an unusual occurrence as many seem to believe, and it is fairly well known that bees will, to meet emergencies, readily start to build upwards.

I have on three occasions seen bell-glasses on skeps with combs started from the excluders—due, presumably, to the breaking down of the starters—but only one was carried the full height and sealed to the glass dome.

On removing a full straw cap in 1908 I was somewhat surprised to find a piece of sealed comb, containing approximately 1½ lb. of honey, built upwards from the skep. It had evidently been built to fill a space between two combs attached to the roof of the cap. On lifting the cap this comb remained as an upward extension of the centre comb of the skep, and there had been no attempt made to brace it to its neighbours, thus proving that bees do occasionally build upwards, even under favourable conditions.—JOHN STEEL, Carlisle.

TERMINOLOGICAL INACCURACIES.

[7920.] Toil and wisdom, Mr. Crawshaw, are not synonymous (page 349). Thin jokes will not stretch to the vanishing-point. They burst. But I take it your remarks were only meant for a good "cussing" of the weather. Were they meant for anything else? Do tell us where the joke is. Surely Yorkshire so much surpasses Cumberland or any other county in "cuteness" that any "native" of it who runs may read that my article was written of a time when snow was falling.

How is it that you have forgotten that Greek mythology which your good old dominie tried so hard to drum into you? Take down that dusty Liddell and Scott's lexicon, and turn to μοῦσα You will find that the Muses were the goddesses of *all* the arts. But it is really funny about "Anna." Surely Jupiter and Mnemosyne being Greek as to their names, their progeny would be Greek; but "Anna" is most certainly Hebrew. Try another anachronism. Try again. They are so funny.—J. SMALLWOOD, Hendon.

Bee-Shows to Come.

October 4 to 7, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. **Entries closed.**

October 20 and 21, at Kilmarnock.—Honey Show in connection with the Ayrshire Agricultural Society's Show. Liberal prizes. Schedules from John Howie, 58, Alloway-street, Ayr. **Entries close October 7.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

MAC (Bridge of Allan).—*Dead Queen Cast Out.*—The queen is a fertile one. Pure black variety.

BEGINNER (Eccles).—*White Bees.*—The bees are evidently working on some flower the pollen of which is white, and they become covered with it. We have noticed the same thing ourselves recently. Feeding up should be done

without delay if you are to get the stores sealed, which is essential to healthy wintering.

F. P. H. (Ware).—*Pure Cane-sugar.*—1. Yes, it is quite necessary for bees, and the reason has been frequently stated in this journal. 2. A great deal of feeding is carried out with beet-sugar, and to this may be attributed so much of the bad wintering of bees and the losses sustained. 3. Bees may live on beet-sugar, just as human beings can live on improper food, but it is hardly correct to say that they thrive on it. On the contrary, weakness and susceptibility to disease may be traceable to improper food. 4. The book you allude to has probably been misled into the belief that the sugar you mention is pure cane, and if the makers do not guarantee it as such we should hesitate to use it. 5. Your encyclopædia is perfectly correct, for cane-sugar is widely distributed in Nature, and, besides the sugar-cane, it is found in sorgum, the Java palm, sugar-maple, beets, madder roots, coffee, walnuts, hazel-nuts, sweet and bitter almonds, and in the blossoms of many plants, as also in honey. The products of all these sources are chemically identical, and if we could obtain them from a chemist's laboratory no doubt we should get them exactly alike. But commercial sugars from beet contain potash salts, in which the sugar-beet is very rich, and which can be removed from the sugar only with the greatest difficulty, and these cause fermentation. Beet-sugar has a lower sweetening power, and, unless very highly refined, a peculiar odour which distinguishes it from cane. Maltose has exactly the same chemical composition as cane-sugar, but would be quite unsuitable for bee-food. Chemically, leather and beefsteak have the same composition, but there is a difference between them, just as there is between cane- and beet-sugar. 6. We should certainly advise you to use only guaranteed pure cane-sugar, even if it is a farthing a pound dearer, for to use beet-sugar is certainly "penny wise and pound foolish." There is no difficulty in getting cane-sugar, as it is advertised in the B.B.J., if you are not able to get it in your own district.

Heather (King's Lynn).—*No Surplus from Heather.*—The specimen you send is *Calluna vulgaris*, or ling. It is not unusual in seasons like the past one for hives to come back from the heather as light as when they were sent. The weather has been unfavourable, and in consequence no nectar was secreted by the plants in many districts.

T. H. (Whitley Bay).—*Introducing Queen.*—1. It is unusual. Possibly you kept the hive open too long, and this tempted other bees and caused robbing and fighting to commence. 2. No, this makes no difference to the bees. 3. You can obtain it from Sutton and Sons, seedsmen, Reading. We do not know the price.

C. H. Edwards (King's Lynn).—*Planting for Bees.*—You might grow horse-beans on the vacant plot of land, though the honey obtained from them is rather dark. We do not know of any other crop that would serve the double purpose, unless you used sainfoin in its green state.

F. J. A. (Ivylane).—*Suspected Queenlessness.*—1. No doubt the queens are there; the absence of eggs and brood is the rule rather than the exception at this time of year, especially in the kind of weather which we have experienced lately. 2. The bees are ordinary English blacks.

Suspected Disease.

H. H. B. (Reading), G. L. (Weybridge), and P. W. (Birmingham).—The bees are suffering from "Isle of Wight disease." Destroy at once and burn all combs, &c., disinfecting hive.

Fraiais (Bangor).—It appears to be a case of acute constipation. Try feeding on warm medicated syrup.

C. B. (Ayrshire).—Only one or two cells contain anything. It appears to be a case of black brood, and "Apicure" will be the best remedy you can use.

R. G. R. (Blair Atholl).—The bees are suffering from constipation, but it does not follow that it is "Isle of Wight disease." Did you feed them on warm medicated syrup, because this usually is found efficacious?

Honey Samples.

J. K. (Bristol).—Sample would be suitable for showing in class for medium-coloured honey. It is good in consistency; flavour of limes strongly predominates. Its chance of success would depend on what was staged in competition with it.

A. D. B. (Surrey).—A good heather-blend honey, and should be sold as such, as the strong flavour of heather is not liked by all.

L. M. M. (Balsall Heath).—Sample is a palatable dark honey, very thick, and of fairly good flavour. Gathered from mixed sources, including limes.

H. S. (Maesybont).—A very nice honey with a strong flavour of almonds. Good in colour and consistency.

Nelson.—Honey of fairly good quality, gathered principally from limes.

A number of letters, &c., are held over till next issue owing to pressure upon our space.

Special Prepaid Advertisements.

SPECIAL NOTICE.

The prices of advertisements in "Special Prepaid" Column have been revised, and are now as follows:—

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Beekeepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as "***Business***" Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½ in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, Excluder Zinc, 3s. dozen given. Will exchange for 1910 young fertile Queens, or post free in introducing cage, 1s. 4d. each. Geared Extractor, Meadows', 18s. 6d.—JOCKMAN, Sidney Farm, Cambridge. d 71

4 DOZEN SCREW CAP 1-LB. JARS GRANULATED HONEY, 10s. dozen, cash with order. —W. B. ALLISTER, Throckenholt, Wisbech. d 72

FINE ROOMY CREAM ART CANE MAIL CART, cost over £5; accept £2 worth good Honey, or cash. — REYNOLDS, Pilsley, Chesterfield. d 70

HONEY, Fine Clover, in jars or bulk. Sample, 2d.—MARSHALL, 68, Chelmsford-street, Lincoln. d 69

WANTED, good Extractor and Ripener.—WRIGHT, South View, Lymm, Cheshire. d 68

3 CWT. CHOICE HAMPSHIRE HONEY, 52s. 4 Sample, 3d.—ARCHER, Eastfield-road, Andover, Hants. d 67

HONEY, English Extracted and Sections, wanted for cash. Send sample and price. — W. H. SIMS, Hall Green, Birmingham. d 66

FOR SALE, 5 Stocks, in quite new Standard size Hives, 4 contain 39 Frames, ample stores, very strong lot, 1 contains June swarm, with 4 Frames. Lot £4 10s., all healthy, owner going abroad. — HARRINGTON, Chemist, Needham Market. d 65

FIRST QUALITY SECTIONS OF HONEY, 10s. dozen, cash with order.—R. COUSINS, The Rosary, Misterton, Gainsborough. d 64

FOR SALE, 4 "Wilkes" Convertible Feeders, only used once, 1s. 9d. each. — STRATTON, Lockeridge, Marlborough. d 63

FINE CLOVER HONEY, 56 lb. tins, 7d. lb. Sample 2d.—85, Highfield Grove North, Rock Ferry. d 62

WANTED, good geared Extractor, also Ripener and Strainer, 2 large Feeders, and other appliances. State lowest price f.o.r.—REV. GWYNORO DAVIES, Barmouth. d 60

WANTED, Reversible Cage Honey Extractor, also Trophy stand.—115, Portland-street, Lincoln. d 61

WHITE WYANDOTTE AND WHITE LEGHORN COCKERELS, choice pure bred, 5s. 6d. each, package free.—MATTHEWS, Ingestre-street, Hereford. d 58

HIVES, healthy, almost new, 10s.; Shallow Combs, Section Racks, Ripener, Rapid Feeder Slow Feeder; also Cheshire's "Bees and Bee-keeping" vol. 1, Scientific, 7s. 6d.; vol. 2, Practical, 15s. 6d.; Simmins's "Modern Bee Farm," 3s. 10d.—R. W. BRIERLEY, Lustleigh, S. Devon. d 57

3 NEARLY NEW 25s. "Observatory" Hives for sale, 12s. 6d. each.—WADY, Broadstone. d 50

Special Prepaid Advertisements.—*Continued.*

FOR SALE, 8 good Stocks of Bees, in Frame Hive, Extractor, and all appliances, nearly new. Particulars post free.—L. STAFFORD, Stoke Talmage, Tetsworth, Oxon. d 51

50 LOTS WARRANTED HEALTHY BEES, 5s. and 3s. 6d. per lot, with Queen.—DENNETT, Whitchurch, Hants. d 56

300 LB. PURE ENGLISH HONEY, in 1 lb. screw-topped glass jars.—CARRETTE, Laurels, Wisbech. d 53

FOR SALE, English Queen, 1910, on frame, sacrifice 3s. 6d. — R. CLARK, 18, Lonsdale-road, Leytonstone. d 54

WANTED, healthy Driven Bees, not less than 4-lb. lots, 1s. per lb.—ALEC LOW, Swailend, Newmachar, Aberdeenshire. d 52

FINEST ENGLISH HONEY, 17s. 6d. per 28 lb. tin. Sample 2d.—DUTTON, Terling, Essex. d 24

FOR SALE, 4 Hives, almost new, £1, or exchange for Honey.—G. HOUGHTON, Peel-street, South Normanton, Alfreton. d 40

SECTIONS WANTED, light colour, first grade, for prompt cash. Quote price and quantity.—COOK, Torwood, Ashford, Middlesex. d 36

OVERSTOCKED.—I offer quantity of appliances, Hives, drawn Shallow Combs, Extractors, &c., cheap; also few stocks of Bees. List free on application.—W. H. SIMS, Hall Green, Birmingham. d 34

GOOD LIGHT-COLOURED SECTIONS WANTED.—R. CARTER, Chartridge, near Chesham, Bucks. d 19

HEALTHY Stocks Bees, Cowan Hive, 25s.; others, £1; Standard Frame Nucleus Hives, painted, 2s.; Louis cycle, good, lady's, 25s. Exchange for Honey.—BEECROFT, Abbott's-road, King's Heath. d 18

CROCUS BULBS, 100 1s.; Arabis plants, dozen 6d.; free.—BRAYSHAW, Aultmore, Keith. d 29

WANTED, "Hymenoptera and Aculeata of British Isles." by Edward Saunders, with 51 illustrations; Curtis's "British Entomology"; the Monograph of "Hymenoptera"; "Flowers, Fruit, and Leaves," by Lubbock. Nature Series.—Address, W. H., 23, Bedford-street, Strand, W.C.

WANTED, for dissection, old worn-out or other Queens, alive. Will friends please oblige? —HERROD, Apiary, Luton.

"HOMES OF THE HONEY BEE."—Electros of Apiaries, for printing on picture post cards or for advertising purposes, 2s. 6d., post free. —Apply to MANAGER, B.B.J., 23, Bedford-street, W.C.

BUSINESS ANNOUNCEMENTS.

HEALTHY BEES, 1s. 3d. lb.; box, 6d.; young Heather Queens, in cage, 2s. 6d.—T. HOOD, Pickering. d 59

HEALTHY DRIVEN BEES, 1910 Queens, f.o.r., 4s. 6d., 3s. 6d.; Stocks, 21s. to 30s., in new Hives; Queens, 2s. 6d.—JONES, Expert, Lee Villa, Wem, Shropshire. d 55

DRIVEN BEES, with young Queen, 3s., in non-returnable boxes.—WADEY, Broadstone. d 39

DRIVEN BEES, free from disease, with good laying Queen, sent in well-ventilated unreturnable swarm boxes, 6s. per lot; good laying Queens, 2s. 9d. each.—THOMAS BRADFORD, Expert, Worcester. c 9

Editorial, Notices, &c.

REVIEWS.

La Cire: Son Histoire, sa Production, ses Falsifications, et sa Valeur Commerciale. By T. W. Cowan, F.L.S., &c., translated under the direction of M. Ed. Bertrand (published by R. Burkhardt, 2, Place Molard, Geneva, and O. Doin and Fils, 8, Place de l'Odéon, Paris. Price 3 francs, or 2s. 5d.).—This is a French translation of the well-known English edition of "Waxcraft," and contains 184 pages, as well as the illustrations from this book. The work is got up in the same style as the English edition, and the illustrations are beautifully reproduced on art paper. There has been a demand for a French translation, and the fact that it has been produced under the direction and supervision of M. Bertrand is a sufficient guarantee that the work has been well done. We hope it will meet with the same favourable reception as the English one has, and thus show that it fills a really felt want.

Handbuch der Bienenkunde. Part 1, *Die Faulbrut und ihre Bekämpfung.* By Professor Dr. Enock Zander (Stuttgart: Published by Eugen Ulmer. No price given).—This is the first part of a handbook on bee-keeping which Dr. Zander is bringing out. It is to contain the substance of lectures delivered to the students at the Royal Institute of Bee-keeping in Erlangen, and is intended not only to be a help to them, but also to other bee-keepers. This first part is devoted to foul brood, a subject which the author deals with in a masterly manner, giving all the most recent information respecting its cause and treatment. He classifies foul brood under three headings —namely, (1) sour brood, (2) foul brood, and (3) brood pest. The characteristics of the different brood diseases are described, as well as their manner of propagation. The best methods of dealing with these diseases is also mentioned, and there are four plates showing diseased combs and the different bacteria found in them. Dr. Zander has made a speciality of brood diseases, and as the same diseases prevail here the pamphlet will be of use to bee-keepers in this country.

We have received from the United States Department of Agriculture the following bulletins:

No. 397, farmers' bulletin, entitled *Bees*, by Dr. E. F. Phillips, is intended to supersede bulletin No. 59 on *Bee-keeping*, by Frank Benton. The aim has been to give briefly such information as is needed by persons engaged in the keeping of bees, and the paper consists of forty-three pages of useful matter for beginners, such as is generally found in such publications. No reference is made to special manipulations, such as queen-rearing, and the allusion to apparatus is very brief. The pamphlet may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., price with postage 6 cents.

The Anatomy of the Honey-Bee. By R. E. Snodgrass. No. 18, Technical Series.—This work of 160 pages goes into the general anatomical structure of the bee. It embodies the results of detailed studies made by the author, who has done considerable original work in dissecting the honey-bee. The drawings given in the paper, of which there are fifty-seven, are mostly original, and are very accurate; but the technical terms and symbols with which the work abounds on almost every page render it more suited to the scientific entomologist than the bee-keeper. There is an explanation of the letters used in describing the different parts, but the ordinary bee-keeper will be puzzled to understand what is meant by *deutocerebrum*, for instance, and does not gain much information by being told the symbol for it is *2Br*, or that *pregula* is represented by *Pgu*. Mr. Snodgrass points out that there are many things in connection with the internal economy of the bee taken as facts which still remain unproved, but he does not attempt to solve these questions, and simply confines himself to describing the anatomical work. Notwithstanding its being so highly technical, the bulletin is a most useful addition to our bee-literature, and it may be procured from the Superintendent of Documents for 26 cents.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on September 15 at 11, Chandos Street, Cavendish Square, London, W., when Mr. T. W. Cowan presided. There were also present Messrs. W. F. Reid, C. L. M. Eales, J. B. Lamb, A. G. Pugh, R. T. Andrews, H. Jonas, O. R. Frankenstein, E. Garcke, G. H. Skevington, T. D. Sinfield (South Beds), and W. Herrod (secretary).

Letters expressing regret at inability to attend were received from Miss Gayton, Messrs. E. V. Shaw, R. H. Coltman, E. Walker, G. W. Avery, F. W. Watts, Dr. T. S. Elliot, Captain F. Sitwell, and Colonel H. J. O. Walker.

The minutes of the council meeting held on July 21 were read and, with an agendum, were confirmed.

The following new members were elected: Mr. E. Loxley, West Heath Road, Northfield; Mr. A. Wood, Colewood, New Road, Mitcham, Surrey; Mr. C. H. Heap, 22, Rowley Road, Whitley,

Reading; Mr. S. Harborne, St. Buryan, Cornwall; Mr. J. Rumball, Tidds Farm, near Welwyn; Mr. D. Roberts, Bryn-yr-Efail, Llanelidan, Ruthin, North Wales; Miss M. Millard, Witney House, Winchfield, Hants; Miss F. E. Paling, 142, Westbourne Grove, London, W.; Mr. J. E. Pinder, Endless Street, Salisbury; Mr. A. S. Dell, County Apiaries, Leigh, Lancs; Miss H. M. Frost, Highfield, Neston, Cheshire; and Mr. M. J. Stephenson, Adams Town, Co. Wexford, Ireland.

The report of the Finance Committee was presented by Mr. Skevington, and it was resolved that payments be made amounting to £34 13s. The receipts for the month of August amounted to £65 3s. 9d., and payments to £74 13s. 9d., leaving a balance in hand of £114 17s. 5d.

The recommendations of the committee were accepted, and it was also resolved to place the money received for the "W. B. Carr" memorial in the Post Office Savings Bank until it is decided how it shall be expended.

The examiners' reports on third-class examinations at Studley, Bradford-on-Avon, Melton Constable, Northampton, Bridgend, Swanley, Bishopston, Bridgwater, Derby, Spalding, Southwell, Exeter, Marshfield, Lancaster, Leamington, Luton, and Carlisle were received, and it was agreed to grant certificates to the following: Dr. R. A. Johnston, Messrs. D. M. Macdonald, A. Nicholls, F. W. Folds, A. W. Hamshar, C. H. Heap, R. C. Osborne, A. Coleman, J. Rumball, J. B. Walsh, W. Abram, J. Draper, P. M. Ralph, A. J. Harris, A. McCullah, A. Turner, W. Tucker, J. C. Mellors, W. H. Windle, T. R. Catchpole, Wm. Sells, Wm. Taylor, H. Jarvis, J. Spiller, W. T. Jones, N. J. Reynolds, W. Gliddon, W. T. Gunter, R. James, W. Morgan, E. Gibbon, C. Weaver-Price, L. Andrews, A. Hiscock, J. E. Pinder, T. F. Judd, T. Jenkins, F. W. Telling, W. T. Dent, A. W. Hopkins, L. V. Steadman, C. A. Smith, G. Dean, W. S. Butler, E. F. Phelan, F. H. Hampton, F. A. Ashworth, Misses E. Edmonds, L. Dupree, E. Bunge, G. Cross, M. Shakespere, N. McIntyre, M. Dodgshun, J. Reid, D. Robinson, L. Bruhn, T. Sutton, T. Naef, C. Hughes, A. Jonsson, C. Hanbury, L. Jenkins, S. Gibson, Z. Lewis, E. Goater, G. Hurd, L. H. Ketteridge, E. H. Smiles, H. F. Leaver, T. Kitchen, M. Terrell, O. Negus, G. Richards, A. Holland, E. Weston, G. Tolson, M. Powell, A. Carr, R. Middleton, L. Walters, and Mrs. Acocks.

After discussion it was proposed by Mr. Lamb, seconded by Mr. Reid, that an application be made to the Treasury, under the Development and Road Improvements Funds Act of 1909, for a grant of £1,000, for the purpose of developing the industry of bee-keeping by:

(*a*) Providing practical instruction in methods and practice of bee-keeping, especially among cottagers and small holders.

(*b*) Carrying out experiments with a view to the improvement and advancement of the industry.

(*c*) The promotion of co-operation amongst bee-keepers, and giving instruction in marketing produce.

(*d*) The training and examination of lecturers, teachers, and experts in bee-keeping.

(*e*) Promoting research as to diseases of bees.

(*f*) Assisting such bee-keeping associations that are in affiliation with the British Bee-keepers' Association as are in need of help to provide adequate instruction in practical bee-keeping.

(*g*) To promote amongst agriculturists and horticulturists the adequate knowledge of the importance of bees as agents for promoting the fertilisation of blossoms, and thereby increasing garden, orchard, and field crops.

And that the attention of the Treasury be called to the following recommendation of the Committee appointed to inquire into the question of Agricultural Education (Clause 63, pages 19 and 20), which is as follows:

INSTRUCTION IN BEE-KEEPING.

Attention may be particularly drawn to bee-keeping on account of its importance to all dwellers in rural districts, especially cottagers and smallholders.

The Committee received valuable and interesting evidence on the subject from two representatives of the British Bee-keepers' Association, one of whom stated that bee-keeping is the most remunerative petty industry in connection with agriculture or horticulture. Indirectly it may be even more remunerative, in view of the useful function which bees perform in fertilising fruit-blossoms.

The question of the importance to fruit-growers of keeping bees engaged the attention of the Fruit Committee, and they recommended "that it would be an advantage to fruit-growers if they kept bees in connection with their fruit-plantations." The witnesses mentioned above gave, before this Committee, much evidence in support of that recommendation; definite cases were given showing the benefit that fruit-growers had derived by the keeping of bees. In one case the yield was by this means increased "simply marvellously"; and in another an orchard, previously unproductive, began, as soon as bees were introduced, to yield an abundance of fruit.

The Committee, therefore, feel that pro-

vision for instruction in this subject, including the preparation of honey for market, should be made in many counties where it is at present unavailable, and the production of honey in this country thereby largely increased.

Resolved: That Mr. Eales, Mr. Garcke, Mr. Lamb, and Mr. Jonas be appointed a committee to draft the formal application, as well as a scheme to be submitted to the Treasury.

After some discussion had taken place *re* the difficulties in connection with the arrangements at 11, Chandos Street, Cavendish Square, it was proposed by Mr. Skevington and seconded by Mr. Eales that the matter of moving permanently to 23, Bedford Street, Strand, be put upon the agenda for next meeting.

Mr. Reid mentioned that there would be a Colonial Exhibition next year and also one in 1915 on a much larger scale. It would be well for the Association to make a good and representative exhibit at one or the other; he left it for them to think it over as to whether they would consider it worth while to exhibit at one or both.

The next meeting of the Council will be held at 23, Bedford Street, Strand, on October 6, at three o'clock.

THE CONVERSAZIONE.

Arrangements were made for holding the Conversazione on October 6 at five p.m. Mr. E. Garcke kindly promised to introduce the first subject, "The Keeping of Records in the Apiary," and Mr. J. B. Lamb "Preparing Bees for the Winter." The room at 11, Chandos Street, Cavendish Square, not being available, arrangements were made for the meeting to be held at the Eustace Miles Restaurant, 40-42, Chandos Street, Charing Cross, London, W.C. Mr. Cowan kindly placed the Board room at 23, Bedford Street, at the disposal of the Council for their meeting on the same date.

CUMBERLAND B.K.A.

ANNUAL SHOW AT CARLISLE.

The second annual show of the Cumberland B.K.A. was held in the covered market at Carlisle on Wednesday, August 31, and Thursday, September 1, 1910. The exhibits, which occupied 140 feet of staging (six tiers), were sent from all parts of the country, the whole making one of the finest collections of honey ever seen by most of those who visited the show. The quality of the exhibits was considered by the judges to be of the best, as evidenced by the large number of "high commends" awarded. The attendance was not quite so good as expected, but on the second day of the show 700 school children were admitted free of charge, and the wonders of bee-life explained to them, with the help of several observatory-hives.

The show was formally opened by Mrs. Murray, of Edenbrows, at 1 p.m. on the Wednesday. The Rev. Canon Rawnsley presided. In the evening a large company took tea at Chisam's Hotel, and a conversazione was afterwards held, presided over by Mr. J. Vicars, who presented the silver cup for the best-managed apiary in the association's district to Mr. James Henry, the winner for 1910. The speakers at the conversazione were Mrs. Pearman, Messrs. D. M. Macdonald, L. S. Crawshaw, Dr. Arnott, Mr. Vicars, Mr. David Hodgson, Mr. Bouch, Mr. Henry, and the hon. secretary.

Mr. Crawshaw acted as judge in the classes for extracted honey, while Mr. Macdonald judged the sections, and together they awarded the prizes for hives, trophies, wax, and photos. Very complete and up-to-date collections of appliances were staged by Messrs. Geo. Rose, of Liverpool, Mr. W. Dixon, of Leeds, and Messrs. Muncaster, of Carlisle. The class for hives was a grand exhibition in itself (fifteen entries), and included hives from most of the well-known bee-appliance firms, besides several amateurs.

The list of prizes is as follows:

OPEN CLASSES.

Sections.—1st, Capt. F. Sitwell, Wooler; 2nd, J. G. Nicholson, Langwathby; 3rd, J. Pearman, Derby; v.h.c., W. Dixon, Leeds; h.c., John Muir, Burnfoot, Kirkcudbright; c., D. Bouch, Aspatria.

Heather Sections.—1st, T. Walker, Hawkshead; 2nd, Capt. Sitwell; 3rd, T. Gutherson, Rothbury; v.h.c., J. Pearman; h.c., W. Dixon; c., J. M. Balmbra, Alnwick.

Extracted Honey.—1st, H. W. Saunders, Thetford, Norfolk; 2nd, A. C. Jackson, Elveden, Thetford; 3rd, J. S. Dixon, Little Clifton, Workington; v.h.c. and r., J. Henry, Egremont; v.h.c., W. E. Richardson, Whitkirk, Leeds; h.c., G. Kerr, Longtown, and G. Moir, Calderbridge; c., J. Muir and D. Bouch.

Extracted Heather Honey.—1st, J. Pearman; 2nd, W. Dixon.

Medium-coloured Honey. — 1st, D. Bouch; 2nd, J. Pearman.

Single 1-lb. Section.—1st, J. G. Nicholson; 2nd, W. Dixon; 3rd, J. Pearman; v.h.c., Capt. Sitwell.

Single 1-lb. Jar Extracted Honey.—1st, F. S. Redpath, Blennerhasset; 2nd, E. J. Wright, Harrington; 3rd, James Henry; v.h.c., Sam Brown, Barrachan, Port William; h.c., A. W. Rollo, Blackford.

MEMBERS' CLASSES.

Twelve 1-lb. Sections.—1st, J. G. Nicholson; 2nd, J. J. Grieve, Blackford;

3rd, J. Atkinson, Newbiggin Mill; v.h.c., G. Kerr; h.c., D. Bouch; c., Miss G. B. Hodgson, Crosby House.

Six 1-lb. Sections.—1st, J. Farquharson, How Mill; 2nd, J. Steel, Carlisle; 3rd, J. G. Nicholson; v.h.c., J. J. Grieve; h.c., Capt. Sitwell; c., T. S. Redpath.

Twelve 1-lb Heather Sections.—1st, Dr. J. Arnott, Brampton; 2nd, W. H. Bennett, Calthwaite.

Six 1-lb. Heather Sections.—1st, Capt. Sitwell; 2nd, Dr. Arnott; 3rd, J. W. Nelson, Appleby; v.h.c., M. Harrison, Edmund Castle; h.c., W. H. Bennett.

Twelve 1-lb. Jars Extracted Honey.—1st, J. S. Dixon; 2nd, Miss M. Bird, Cliburn, Penrith; 3rd, A. W. Rollo; v.h.c. and r., H. Hutton, Abbey Town; v.h.c., W. Henderson, Blackford; h.c., D. Bouch and J. G. Nicholson; c., G. Kerr, T. S. Redpath, and S. A. Peart, Carlisle.

Six 1-lb. Jars Extracted Honey.—1st, J. Steel; 2nd, G. Moir; 3rd, D. Bouch; v.h.c. and r., J. Henry; v.h.c., T. S. Redpath and G. Kerr; h.c., A. W. Rollo, Miss M. Jackson, Houghton, J. Farquharson, and W. Henderson; c., Capt. Sitwell.

Extracted Heather Honey.—1st, J. G. Nicholson.

Medium-coloured Honey. — 1st, W. Bouch; 2nd, G. Moir; 3rd, J. Steel.

Honey Trophy (open).—1st, W. Dixon; 2nd, J. Pearman; 3rd, W. R. Dennison, Penrith.

Hives (open).—1st, Geo. Rose, Liverpool; 2nd, W. Dixon; 3rd, Messrs. Gibson and Cairns, Carlisle.

Hive Made by Member of Association.—1st and silver medal, Muncaster Bros., Carlisle; 2nd, Messrs. Gibson and Cairns; 3rd, D. Bouch.

Beeswax (open).—1st, J. Price, Old Hill, Staffordshire; 2nd, A. Hiscock, Kettering; 3rd, H. W. Saunders; v.h.c., J. Pearman; h.c., D. Bouch; c., W. Dixon.

Photos of Bee-keeping Subjects (open).—1st, W. Dixon; 2nd, T. S. Redpath; 3rd, P. M. Ralph.

Best Packed Exhibit of Honey (open).—J. Henry.

Silver Cup for Best Apiary.—J. Henry.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

CODDLED OR STARVING BEES.

[7921.] Mr. J. Bee Mason, writing to the *Daily Mail*, seems to think that bees kept under modern conditions are not so healthy and vigorous as those living in the more natural state, in trees, old buildings, &c. He looks upon this condition as ideal, because he usually finds there is an abundance of stores, and the bees do well when put into modern hives. He also considers there is too much "coddling" of bees nowadays, to which he seems to attribute the deplorable state of many stocks reported from different districts in the British Isles. May I say for the benefit of many amateurs that in a season like the present it is imperative that bees should not be left to take their chance? Many stocks that were strong and healthy at the beginning of the season have lost vitality and are in a semi-starved condition through cold, damp, and indifferent weather. In many cases bees in a district where a surplus of honey averaging from 30 lb. to 40 lb. in a good season would be taken have to be fed during the summer months in a bad year. This is due largely to the coldness of the soil with continuous rain preventing the plants yielding nectar. Where the soil is not so cold nectar will be yielded more freely. Then, again, different plants undoubtedly yield nectar at varying temperatures. I happen to know the district in which Mr. Bee Mason has recently started an apiary. His bees have practically an unlimited foraging ground, and therefore have a fair chance of maintaining themselves and giving a good surplus of honey to their owner. What would the bees he took from trees, &c., do in a good season in this district, if they have done so much better than many others this year—one of the most disastrous?

Referring to bees living in the more natural state, it is a well-known fact that abundance of honey of a kind may be found. I well remember spending an afternoon with the late chairman of the Suffolk B.K.A. cutting out bees and combs from a hollow tree. The situation was in a farmyard, the tree overhung the drift where horses, cattle, and men had to pass daily, and where many an epithet was hurled at the bees and many a battle fought and won—by them! To reach the entrance to their domicile a hay-cart was chartered, in which we stood, smoke was puffed in among the combs, and with an axe the aperture was made large enough to reach the bees and combs. These were attached to a knotty part of the tree, and were 3 ft. in length. The combs, which were filled with very black honey, required three large flat milk-pans to hold them, but the number of bees would be less than half that of a good stock in a modern hive. Another case was that of bees in a gable-end of a building near Colchester. When the

plaster had been taken away, 10 ft. of combs were found hanging in a narrow space, and about 6 cwt. of honey was extracted from them. For years this had been increasing, as the bees gathered more stores than they required, and so had to extend the combs. These and many other cases show that bees living under natural conditions are seldom without food, and do not live in unprotected and exposed positions. Does Mr. Bee Mason consider the fact that we are not able to discover easily whether bees deteriorate much in spring, when so much brood is chilled in the ordinary way, and so may do so under natural conditions? Hence the number of bees using up stores is not so great, and there is less likelihood of their dying out. Should this be the case, it is possible that their place might be taken by vagrant bees. Bees must have warm coverings over the frames to prevent heat escaping when brood is being raised, and must be fed when insufficient honey is coming in. This autumn many stocks will need a great deal of syrup, which should be given at once, if not already done. They also require plenty of quilts to cover the frames.—A. W. Salmon, Ballards Lane, Finchley.

The letter referred to by Mr. Salmon is as follows:

Sir,—A great deal has been written lately concerning the welfare of bees. Reports have been received from many parts of the country that the bees are on the verge of starvation owing, it is alleged, to the lack of sunshine and continuous rain, and I am inclined to think that the weather is not altogether to blame for the sad plight they are in.

During the last two or three years I have had a great deal of experience in removing bees from old trees, walls, eaves of houses, &c., and in every case I have found the bees were strong in numbers, free from disease, and had abundance of stores, and yet bee-keepers in the neighbourhood were complaining that their bees were short of food. How is it, then, that bees living under natural conditions, in many cases with very little shelter and exposed to cold winds, are doing so well, while bees in modern hives, receiving every attention, are in such a deplorable plight?

I am strongly of opinion that many bee-keepers, particularly beginners, who are invariably enthusiasts, practically kill their bees with kindness. They cover them up with warm quilts, stop all draughts, feed with warm syrup, and in some cases hot bricks are placed in the hives in cold weather, with the result that instead of the survival of the fittest the very reverse happens, and bees are reared like hothouse plants and refuse to leave the hive in search of food in bad weather. More feeding—frequently with beet-sugar, which is most injurious to the bees—has consequently to be resorted to.

Last spring I established an apiary with bees removed from old trees, roofs of houses, &c., and, considering the adverse weather, they have done remarkably well. One hive has yielded 80 lb. of surplus honey, and I have left them over 20 lb. to carry them through the winter. Some bees I took from a tree so lately as July have built their combs and stored sufficient food to last them well into next spring.

I feel certain that if bee-keepers would not coddle their bees, but allow Nature to use her pruning-knife and weed out the weaklings, they would in a short time have a strain of bees capable of taking care of themselves.

Bures, Suffolk. J. C. Bee Mason.

WAX-MOTH IN MEXICO.

[7922.] We have no bee-disease here that I know of, but the wax-moth fills the place of all the diseases that bee-flesh is heir to. In Roots' "A B C of Bee-Culture" I read that "when a person complains that the wax-worm killed his bees, you can set him down at once as knowing very little about bees." I should say that the writer of that opinion knew far less of wax-moth. Then I have read for years past that the wax-worm requires nitrogenous food, and at last I see on page 476 (August 1) of *Gleanings* that the statement "is all wrong," as "it is chiefly wax," and "perhaps altogether in some cases." This fact I have known for years, but, being only a keeper of bees and not a "bee-keeper," I have not presumed to contradict the experts. Dr. C. C. Miller once asked in *Gleanings* if anyone had found the wax-moth lava 2 in. away from a comb. I have found the lava on the alighting-board underneath the entrance-blocks, which are outside the outer case of and $2\frac{1}{2}$ in. in the clear from the brood-chamber; thus it was 5 in. away from the nearest frame. It was recommended in *Gleanings* to hang combs 2 in. apart and in the light to preserve them from the wax-moth. I hung up in this way a lot of new combs taken from supers that had never had brood, or pollen, or honey in them; these were cut to pieces, and the grubs, $1\frac{1}{4}$ in. long, had grooved the soft pine frames $\frac{1}{8}$ in. deep wherein to stick the cocoon.

Such is the wax-moth here, where the thermometer varies from 110 deg. in the shade to freezing-point sometimes, and the bees work the whole year round, and so does the wax-moth. The only remedy I have found is to keep the hive overflowing with bees; not that this pre-

vents grubs entering by any means, but the bees clear them out. The class of bees I have is the same as I had in Australia in the sixties, and, so far as I remember, are the old English brown bee. They are good fighters, quiet when gently handled, produce about 200 lb. of honey per annum, and swarm but little when they have plenty of room given them in proper time.

I must beg your kindness to excuse this long and, I am afraid, uninteresting rigmarole *re* wax-moth. With all good wishes.—FRANK W. BREACH, Chinipas, Mexico.

HONEY-HARVEST IN AYRSHIRE.

[7923.] The honey-harvest in this district has been very good. Stocks here, as elsewhere, were rather weak in the spring, with the result that it was the second week in June before work began in the supers. For about a fortnight after this a fair quantity of honey of a good quality was being stored by the bees. The weather then became wet and changeable until well into July, and it took the bees all their time to keep themselves going without drawing on the honey already stored. This was followed by an exceptionally fine fortnight, during which time the honey simply poured in. By inquiry the nearest results I can arrive at are: Where the bees were well looked after, an average of 80 lb. surplus per hive was secured; where they were allowed to swarm, or were not brought to full strength quickly enough for the first honey-flow, about 50 lb. per hive. The largest take from a single hive in the district was 144 lb. extracted. The honey on being removed from the hive was kept and extracted separately, so that there was no mistake. One of my hives gave 100 lb. of section-honey, the amount from my five hives being about 400 lb.; they also reared four young queens. A neighbouring bee-keeper living a few miles away had the same result almost to a pound from five hives also. It is chiefly clover-honey of a very fine quality. The fields around were simply white during July; no one remembers such a show of clover in this district before. The heather crop here, as in most other districts, has been a failure; only where the hives have been at the moors all the season in a heather district have I heard of any finished sections being taken off. Bee-keepers here are very sorry to hear such bad reports coming from all over the kingdom, at the end of what they thought was a very successful season generally; but as we read them we congratulate ourselves on our good fortune.

Stocks, generally speaking, are going into winter quarters very strong, and with plenty of good food they should stand an average winter well. We are already looking forward to next season, trusting it will be a better one for all. Before stopping I might add as encouragement to beginners that I only commenced bee-keeping four years ago, and up till this one my largest season's take was 30 lb. My motto is "Keep young queens only."—W. ALLAN, Ayr.

BEE-STINGS AND RHEUMATISM.

[7924.] Your correspondent F. Jarrett's *experience* (7908, page 357) really needs no comment from me, as of course he does not mean anyone to take it seriously. My reason for writing to you is to state my own case. On and off for about seventeen years I have been subject to rheumatism, having had rheumatic fever three times, which sometimes left me crippled for months at a stretch. It is now nearly two years since I had my first bee-stings. About three applications of six stings at a time completely freed me from pain, of which I am very thankful to say I have had no return; in fact, it is a pleasure to be alive now, whereas it was misery before. I have had other stings since then, having applied them to myself in the garden as a preventive. I can also give particulars of cases of friends of mine who have been cured in the same way.—F. J. CLARKE, Erdington.

THE SUNRISE AND THE EARLY BIRD.

[7925.] There used to be an annual rivalry between two skeppist bee-keepers at the village of Kibblesworth as to who would get the first swarm. One of these bee-men gave me a careful and impartial account of the contest. He lost on every occasion, although his hives lacked nothing in packing and other attentions, and he was most emphatically of opinion that his rival's success was due to the situation of his apiary, which was on rising ground and got the sun a little earlier in the morning.

Close to my bees at Stocksfield there are two hives, on the slope of a hill, which get the first rays of the rising sun. In the garden arabis blooms a fortnight earlier than in mine, and I am every year surprised at the forwardness of these stocks in the spring.

I know of an old bee-keeper who has a score or more of hives on the top of a high hill sloping to the south, the hives receiving the first rays of the sun, and it is always a mystery to the younger fraternity how he gets them so crowded with bees. His success, however, is not due entirely to the accident of the situation, but is also the reward of incessant care and

watchfulness. This bee-keeper last month was carting bees to the moors more than a week before most other bee-keepers; and, hearing of this early trek, I took my hives on August 6, reaching the moors at dawn. The sun rose in a slight haze like a huge red ball, and as I looked back the old bee-man with a cartload of hives came into view on the brow of a steep hill, and was silhouetted for an unforgettable moment right in the midst of the rising sun. It was his last load, and we were the early birds. The heather was well in bloom, and during the whole of the following week the sun shone clear in a blue sky, and the bees sang their happy song amongst the purple hills. This golden week was lost by very many bee-keepers with most unfortunate results. The moral is clear that the bee-keeper must not only woo the first rays of the sun, but also take the first bloom of the heather.—J. M. KIDD, Stocksfield-on-Tyne.

Queries and Replies.

[4050.] *Results of Chloride of Lime Treatment.*—On August 17 I re-queened my three stocks of blacks with golden queens, giving each six new frames and foundation. All three were successfully introduced. As a preventive of foul brood I made a kind of wooden "ditch" arrangement under a part of each floor-board, taking out a strip 3 in. wide from side to side, and covering it with perforated zinc. In each of these "ditches" I placed a sliding wooden tray (wooden blocks prevented cold air getting in). In each tray I placed at intervals of three or four days about a teaspoonful of chloride of lime, which none of the bees seemed to mind. I fed up liberally with medicated syrup. About a week ago I noticed in one of these trays a number of evidently worker-eggs, which must have come through the perforated zinc. Early on September 4 outside another of the hives there were hundreds of dead and dying bees, the latter being soon killed by a heavy rain. These I buried. This morning outside the same hive there was a similar state of affairs. A brother bee-keeper whom I consulted was of my opinion, after seeing the stocks, that it was *not* a case of robbing. We also noticed about twenty eggs in the sliding tray underneath. On looking through the hive we saw hundreds of "Goldens" but no sign of an egg or brood, although the queen was there. The eggs in the tray must have dropped there within the last day or two. There was plenty of honey stored. The other two stocks seem quite all right, although treated in the same way. I am sending by this post in a queen-cage some of the bees we picked up from the ground. Would you kindly tell me: 1. Why eggs have been dropped? 2. Why there are no eggs or brood in cells? 3. Why should such a large number of bees die on the ground near the alighting-board when there was no robbing? Needless to say, I have stopped the chloride of lime treatment.—W. J. C., Minster.

REPLY.—1 and 2. Sometimes very prolific queens will drop the eggs, especially if all the cells are occupied; but as this does not appear to be the case with you it is probably due to some abnormal condition of the queen, which prevents her from depositing the eggs in the cells. 3. It is impossible to say from dead bees what caused them to die. Those sent showed the usual putrefactive bacteria, and there is nothing special that would indicate disease.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Selling Honey.—This is at present the all-engrossing subject with bee-keepers, and several articles in the *Review* are devoted to its consideration. The general conclusion is: "The foundation of a honey market is well-ripened honey, and no honey is equal to that which is ripened by the bees." This applies to comb as well as extracted, and the difference between honey rushed off the hive and that left on to be cared for by the bees is most marked. A lover of good honey quickly detects the difference, and purchases from the producer who caters to his taste. Well-ripened comb honey has a flavour and aroma all its own, while its consistency is most marked. It is, indeed, honey, and not nectar. Secure this form, do honest grading, put up in attractive packages to invite purchasers, and, above all, make a square deal with the buyer, and you will retain his custom. The results in this country seem all over to be only half a crop, so good prices should prevail. Locally 10d. to 1s. per lb. for clover and 1s. 2d. to 1s. 6d. for heather honey are the current prices. Recently, however, I saw fairly nice sections for sale in a leading grocer's window at 8d. On inquiry, I was informed that they were purchased by their vanman for 6d. each. The seller evidently has not yet learned his A B C of bee-keeping, because in the same town bee-keepers were getting 10d., and in some cases 1s., per section.

A Sting Cure.—Although my own cure is grin and bear it, I am always interested in noting and passing on any new idea on this, to many, important point in bee-keeping. Here is one from the *American Bee Journal:* "If I get a sting, I salt it

real heavy. Damp the salt on the stung part after removing the sting with a knife, and you will hardly know that you have been stung."

Steam Heat.—Mr. Byer considers the steam-heated uncapping-knife has come to stay, and says that he will have no more cold knives, and, better, his good wife, who does most of the extracting, fully agrees with this verdict. Another user says: "It is a stick-shaver, and saves a lot of muscle."

Placing Empty Supers.—As one who has long been an advocate of placing empty racks of sections above those already on the hive when giving additional super-room, I have pleasure in quoting the following from the editorial pages: "Some place empty supers *on top* in all cases, having surplus there finished more promptly. Others place empty supers *under* the partly-filled one, so as to encourage prompt beginning of work. Perhaps the best way is to do both. While a good flow is on, add a fresh super under, and in addition an empty super may be placed on top." The placing of the super-room above is an excellent aid to swarm-prevention. This year racks of sections added above in early August had the additional space well taken to by the bees, and the lower rack was well finished. Where placed below the first neither was completed, and so a pile of partly-built sections is the result.

"The Best."—Mr. York is emphatic in his pronouncement in favour of Italians—for Chicago. That is well, but it still allows my opinion to go uncontroverted. Here is what his associate editor says in *Gleanings:* "In America, Italians are said to be least susceptible to foul brood. In South Switzerland, where Italians are natives, foul brood is most devastating." Dr. Miller's comment on above is: Blacks more vigorous than Italians in Switzerland, hence more immune; Italians more vigorous in America, hence more immune."

Feeding.—In this country, where many small apiaries are so closely contiguous that they are within short reach of each other, it is best and safest to do all feeding inside hives, and as a rule the most suitable time to dispense the sweets is towards sundown or after, when all neighbouring hives have quieted down for the day. Where more isolated, here is a plan worthy of experiment: "Two hours before night place at the entrance a frame of honey, and when the bees have gathered on it place it in a hive covered with burlap, and carry it away some rods distant—the farther the better. Next evening they will not need to be baited. In the same way, if the feeder is placed close to the hive, when the bees get to work on it a little, carry it, bees and all, to the point desired." This is also an excellent way of getting wet combs or sections cleared up. The distance from the hives prevents robbers, at least in any numbers, from scenting the tempting sweets.

Pollen.—From an informative article on pollen in the *Australasian Bee-keeper* I cull a few facts: In a single head of dandelion we may have about a quarter of a million grains. One peony may have over three and a half million, while a maize plant may produce 50,000,000. The ovule of the flower may be considered the female organ and the pollen grain the male organ of plants. Myriads of pollen grains are produced in order that one ovum may be reached. Nature is often profuse in securing that her ends are attained. The bee, as we know, is a valuable agent in bringing about the fertilisation of most plants.

Pollen grains vary considerably in size; some are about $\frac{1}{1000}$ in., while others are only $\frac{1}{10000}$ in. In form they vary still more, although there is generally a close resemblance between members of the same family. Some are nearly round, but provided with prickles or spines. Others are irregular, but have a rough surface. All the more regular grains have projections, spines, grooves, &c., helping the grains to cling together. In this way the bee can quickly gather a compact and securely heaped-up load. Presciently she knows that in the early part of the day plants are moist, and then she can gather up with ease and comfort. When too dry she can, however, herself supply the moisture necessary for the adhesion of particles.

Bee-Shows to Come.

October 4 to 7, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. **Entries closed.**

October 20 and 21, at Kilmarnock.—Honey Show in connection with the Ayrshire Agricultural Society's Show. Liberal prizes. Schedules from John Howie, 58, Alloway-street, Ayr. **Entries close October 7.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

R. E. S. (Bromsgrove).—*Bee-keeping in the Canary Islands.*—1. Honey is one of the articles exported from these islands. 2. As bees are cultivated there you would no doubt be able to procure swarms. The native black bee, the North African variety, is the one cultivated, and is best suited to the hot

climate. 3. British methods of bee-keeping will be quite suitable. 4. There is no difficulty in wintering, as bees are generally able to store sufficient honey for their requirements, and are able to work during the greater part of the year. 5. Yes, you will be quite right if you follow the instructions of "Guide Book," making allowances for the warmer climate. If you are acquainted with the Spanish language you should get "Cuidados del Colmenar," by E. Bertrand, published in Barcelona by Gustova Gili, price 4 pesetas, or 3s. 4d. of our money. 6. We would advise you to take out English hives and any appliances you may require.

H. H. S. (Caterham).—*Names of Flowers.*—1. Too dry and not recognisable. 2. *Senecio Jacobœa* (ragwort). 3. *Scabiosa succisa* (Devil's bit). 4. *Heracleum sphondylium* (hogweed).

R. J. B. (Twickenham).—*Leaving Sections on Hives.*—We would advise you to remove the sections and excluder, feed up the bees as rapidly as possible, and prepare for wintering by removing superfluous frames, contracting with division-boards and covering up comfortably.

E. W. J. (Grimsby).—*Storifying for Surplus.*—1. As you are not able to have your bees near you, your best plan would be to work on the storifying principle, fully described in "Guide Book," page 62. 2. It is not surprising that your swarm of August 1 has only five frames of brood and stock. As it was only a small swarm covering three frames, the 5 lb. of sugar per week that you gave the bees has only enabled them to produce this, and has just been sufficient to keep them going. Where bees are not able to find pasturage, if they have to build comb they must consume enough syrup to enable them to do so, as comb-building late in the season requires more honey for its production than it does in the swarming season. The swarm being late and a small one, was practically valueless except for uniting with another lot. 3. Your best plan would be to get some driven bees and unite with yours, to strengthen the colony and enable it to winter. 4. Any of the appliance dealers advertising in our columns could supply you with a large feeder to hold 1 gallon. 5. There is no difficulty in placing it on brood-box, as it can rest on two of the sides which will support the weight.

W. H. P. (Carlisle).—*Bees and Sugar Sweets.*—The bees will not take any harm, as the sugar they gather will be used up while they are still able to fly. We do not see how you can claim redress, as the affair is clearly an accident.

A. E. F. (Bath).—*Moving Bees.*—1. At this time of the year, when bees are flying freely, it would be better, if you are able to do so, to remove your hives a distance of a couple of miles, and after allowing them to stay there for two or three weeks move them back to the place they are to occupy. 2. If you are not able to do this, confine the bees in a cool cellar for at least five days, and see that they have proper ventilation. Then remove them to the stands they are to occupy, and on releasing them it would help to avoid the risk of some of the bees returning to the old stands if a little loose grass were laid about the hive-entrances, just to cause the bees to notice a change by having to pass over the grass on taking their first flight from the new stands.

G. S. (Dingwall). — *Queen Entering Wrong Hive.*—The bee is an Italian, and no doubt your explanation is just what has happened. You can tell in spring if you are correct, when the young bees are hatching. If they are Italians you may be sure the queen returned to the wrong hive.

D. C. D. (Ayr).—*Race of Bees.*—Bees are the ordinary English black. We should certainly advise you to rear your own queens, as the bees have given such good results.

M. H. (Chelmsford).—*Bees Storing No Surplus.*—You are only a victim of the weather, and many others are in a similar plight this season. Should next summer be a good one you will find things quite different, and probably secure a good surplus.

Warwickshire Reader.—*Bees Found Dead.*—The stock has become weak and other bees have robbed it out.

F. J. Aldersey (Essex).—*Queen Not Laying.*—1. Queens ceased to lay very early this year, and it is quite probable that your queen is fertilised. 2. There are times when even feeding will not induce them to lay late in the season when once they have given up, or when they have not commenced laying. 3. If not fertilised, it is too late for this to take place now. 4. If a queen commences to lay before fertilisation she remains a drone-breeder.

E. K. (Coedpoeth). — *Drone-breeding Queen.*—From what you say we should judge the queen is unfertilised. It may have been sent inadvertently, and no doubt the dealer will replace it.

Honey Samples.

W. H. (Swaffham Bulbeck).—No. 1. Good in colour, flavour, and density. No. 2. Very thin and unripe, medium colour, and very strong flavour.

W. G. B. (Burnley).—Honey is fermenting, and is of no value.

M. N. (Middlesex).—A very good clover honey, not quite dense enough to be up to show standard.

H. M. (Berks).—It is not honey at all, but has been obtained by the bees from a sweet or jam factory.

A. W. (Croydon).—No. 1. Colour and density good; from lime principally. No. 2. Very similar, but not quite so thick.

S. P. L. (Maidstone).—No. 1. A very nice table honey, principally from lime; would not advise you to exhibit it except at local shows. No. 2, a much brighter honey, is principally from clover, but there is a slight flavour of lime. The price offered is good, and we would advise you to accept it.

H. F. (Glyn Pond). — No. 1 is a nice sample of clover-honey, but too thin for exhibition. No. 2 contains a lot of unripe honey and is commencing to ferment.

B. (Hants).—Yes, the honey is ripe, and is most delicious in flavour.

C. R. (Bucks).—It is not English honey.

F. O. F.—We do not think it was produced in England. It is evidently a foreign production, or partly so.

F. C. S. (Yorks).—A nice honey, principally from clover.

Mid Kent.—The one without stamp edging is the better, and would do to show locally. Both samples lack density. Worth about 10d. per lb. retail.

Cumbrian.—1. No. 2. Yes, in flavour and density. 3. We should save No. 2.

Suspected Combs.

D. C. H. (Burry Port).—Yes, it is foul brood.

R. J. D. (St. Albans). — The bees are suffering from constipation, and feeding with warm medicated syrup will no doubt remedy it.

G. F. J. (St. David's). — There is no brood at all in the sample of comb sent.

A. W. T. (Berkswell). — You did quite right, as the comb is affected with foul brood.

H. L. N. (Lanarkshire). — 1. There is wax-moth in the comb sent, and if any others are in the same state they should be at once destroyed. 2. We can find nothing in the other specimen but chilled brood. Evidently the hives want a thorough clean-up and the combs renewed. It would not be fair to sell colonies and hives in such a condition.

J. (Sunbury), Enquirer (Olton), Shipley (Baildon), and Anxious (St. Albans).—Bees are suffering from "Isle of Wight disease." Destroy the stocks at once, burn all combs, &c., and thoroughly disinfect the hives and ground on which they stood.

Editorial, Notices, &c.

REVIEWS.

We have received from Professor Dr. Fleischmann the annual report for 1909 of the Royal Institute of Bee-keeping in Erlangen, which is highly interesting as it gives particulars of the work done by that institution. Chemical and microscopical as well as experimental work is carried on, and we notice that amongst the enquiries there were five from England. The pamphlet deals with the extent of foul brood, and on page 4 there is a map of Bavaria showing the prevalence of the different forms of brood diseases in the various districts. In Bavaria there were 400,000 colonies of bees, of which 2,700 had foul brood, while eighty only suffered from dysentery. There is an illustration and description of a heated glasshouse in which colonies of bees are kept for experiment in winter. Regular courses of lectures are given at the institution both in the science and practice of bee-keeping. There is also a full report of the work of the inspector of apiaries, which shows the systematic way in which instruction in bee-keeping is imparted in Bavaria. One hundred and seventy students attended the lectures, of whom 113 took the special foul-brood course and fifty-eight the course on practical bee-keeping. Altogether the report is very interesting reading, and shows what can be done with Government assistance.

Les Trésors d'une Goutte de Miel. By Alin Caillas (published by the author at 33, Rue du Docteur Blanche, Paris. Price 1 fr. 25 c.—1s.).—The author of this capital little pamphlet thinks that the consumption of honey at the present time is not so great as it should be, and its great value ought to be made known, but hitherto bee-keepers have not done sufficient to eulogise it. Little is done to induce the consumer by tasting it to appreciate and to become fond of so wholesome a product. With a view to popularising honey, this pamphlet, which is the substance of a lecture given before a scientific society, has been produced, and we must admit that M. Caillas makes a very strong plea in favour of its general use. The author is an analytical chemist, and naturally goes into the analysis of honey; but every operation is explained in a popular style, and technicalities are carefully avoided. He tells us how sugars are found in plants and how these are transformed by the bee into honey, very easily digestible and capable of nourishing with the minimum of effort. He shows what minute quantities of mineral matters are in the honey, and their value, the phosphates particularly being aids to digestion. There is much in the thirty-three pages of the pamphlet worth studying, and the illustrations assist greatly in following the operations as they are described. We also find that he is able to show that the soil on which plants grow is of great importance to the bee-keeper. A rich soil yields a honey rich in mineral matter. Analysis has demonstrated that soils poor in iron and phosphoric acid yield a honey poor in these elements. The results prove that honey obtained on richly-cultivated land is of higher value than that got in poor or uncultivated districts. M. Caillas in this pamphlet certainly demonstrates the treasures contained in a drop of honey, and anyone reading it cannot fail to be not only interested but also instructed.

NORTH NORFOLK B.K.A.

ANNUAL SHOW.

The seventeenth honey show of the North Norfolk Bee-keepers' Association was held in Melton Constable Park, by kind permission of Lord Hastings, on August 1, in connection with the Melton Constable Horticultural Society's show.

There was an entry of seventy-one exhibits, or 451 lb. of honey, as compared with sixty exhibits and 332 lb. last year. Mr. Herrod acted as examiner (three candidates entering for the third-class experts' examination), and also as judge of the honey, the awards being as follow:

Twelve 1-lb. Sections Comb Honey.—1st and bronze medal, Miss Heathcote; 2nd, H. W. Saunders; 3rd, W. F. Fake.

Twelve 1-lb. Jars Extracted Honey.—1st and silver medal, W. F. Fake; 2nd, H. W. Saunders; 3rd, W. J. Norman; v.h.c., R. W. Lloyd.

Six 1-lb. Sections.—No first prize awarded; 2nd, F. Chapman; 3rd, M. B. Sadler.

Six 1-lb. Jars Honey.—1st and certificate, J. Mayer; 2nd, G. Farrow; 3rd, G. Chadwick.

Three 1-lb. Jars and Three 1-lb. Sections.—No first prize awarded; 2nd, Mrs. Neale; no third prize awarded.

Beeswax.—1st, H. W. Saunders; no second prize awarded; 3rd, S. J. Mayer.

OPEN CLASSES.

Twelve 1-lb. Sections.—No first prize awarded; 2nd, W. Fake; 3rd, S. J. Mayer.

Twelve 1-lb. Jars Extracted Honey.—1st, W. F. Fake; 2nd, H. W. Saunders; 3rd, W. J. Norman.

Single 1-lb. Jar (special class).—1st, A. E. Jackson; 2nd, H. W. Saunders; 3rd, W. J. Norman; 4th, W. F. Fake.

Single 1-lb. Section.—1st, H. W.

Saunders; 2nd, S. Mayer; 3rd, S. J. Mayer; 4th, F. Chapman.

Challenge Cup.—Miss Heathcote.

During the afternoon demonstration lectures were kindly given by Mr. W. Herrod and Mr. C. J. Cook in the bee-tent, and were much appreciated.—H. F. Leaver, Hon. Sec.

AMONG THE BEES.

FOUNDATION.

By D. M. Macdonald, Banff.

No greater boon has been conferred on apiculture than the discovery of impressing sheets of wax with the base and outline of the hexagonal cell. Rude at first though the embossing was, the germ-idea soon bore fruit, until now we have foundation about as perfect as one could desire. As it is turned out by the leading manufacturers, both here and in America, it is in every way thoroughly reliable. With proper care in keeping, handling, and inserting in frames and sections, bees should never refuse it, and there should be none of the vexatious faults and breakdowns so common a good few years ago. These manufacturers have now acquired a name and have to maintain it. Pressed as they are by rivals, any laxity or carelessness would soon tell on their sales. Hence all keep up to the high-water mark. Different bee-keepers have a preference for one or other of the "brands," but it would be invidious to select any of these and say it was the best. Perhaps the wisest advice would be to send for several samples, test them, and select the best suited to one's own individual taste or circumstances. Each dealer will sing the praises of his own wares, but the man who says "Just try it" has said the best for a good article, as "The proof of the pudding is the preeing (or tasting) of it."

A free use of foundation both in supers and brood-body is to be recommended. It is undoubtedly a time-saver, as bees fill up and finish off a rack of sections much more expeditiously when full sheets are given. A swarm hived on simple starters must be considerably handicapped compared with another housed on full sheets of fresh foundation. In each case the time taken to complete the fabric is shortened by the liberal use of foundation, and in this instance, beyond a doubt, time is money—and honey. Not only is it a time-saver, but it is also a work-saver. Work ages bees more than the few weeks they may live during the active season. Thus we save the valuable lives of our bees at a season when it is of the utmost importance that our stocks should be at their strongest. If a few thousand bees are busy toilsomely evolving wax from the garnered sweets, constructing with that hard-won solid the delicate and dainty fabric of the hexagonal cells, to the number it may be of 50,000, it stands to reason that just so many thousands short go out foraging to the fields which are then white as to harvest. Liberate these thousands by the shorter process produced by a free use of foundation and you save a vast amount of labour on the part of your toiling thousands, eager to profit by each shining hour.

Then it is well worth while to take into consideration the much more perfect fabric likely to form the brood-nest. Room for rearing 5,000 or more useless drones is not required in a modern apiary. The time, trouble, material required, all count in their disfavour, while the space necessary for hatching workers is curtailed. You may trap them, or the bees may kill them, deeming their room better than their company. That is well, but it would be better far to use all worker-comb foundation, so that this unnecessary burden may not be imposed on the already overburdened workers. Some bee-keepers find excluder-zinc honey-excluders a necessary part of their apicultural paraphernalia, but if they would be more free with the use of foundation in their sections they could eliminate this hindrance from their list of supplies. A queen wanders aloft in search of drone-comb, and, finding it there, lays eggs in vacant cells; but if she finds instead only worker-cells, as she ought, she at once retires to the brood-nest proper, and requires no artificial aids to exclude her from upstairs. A niggardly use of foundation in sections invites the bees to build large store-cells, and their presence there alone tempts the queen into regions where her visits should be unknown. Therefore, full sheets are the best and cheapest in the end in sections as well as in brood-frames. By the "new process" brood-foundation may be used eight sheets to the pound, and if wired it may be so thin as to run to ten sheets; but if too light it is not so reliable, being more subject to a breakdown. Super-foundation is much thinner, and some prefer it extra thin, as they consider there is then less midrib in the finished section. I prefer the sheets thirty-two to the pound, and cut each of these in four, thus filling 128 sections from one pound of foundation. I have not found that thinner is any advantage, as when good reliable wax is used the section melts away in the mouth without leaving any residue from the medium thickness. Two of the large American manufacturers of foundation recently put on record that they have only a moderate sale for extra thin in supers, or thin in brood-frames, but that in both cases the medium is the favourite.

Great care must be taken to preserve super-foundation kept over from former seasons from any chance of deterioration. Frequently what has been on the hive for a long period in a season of dearth, such as last year, is so heavily varnished with wax or propolis, or both, that it hardens and leaves a regular fishbone in the finished section. Perhaps the better plan would be to return all such with the wax-cake to the manufacturer to be remade. The manufacture of foundation may be dealt with at an early date, as I recently had the pleasure of seeing the whole process.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

WHAT IS HEATHER-HONEY?

[7926.] Scotland and the North of England pride themselves on producing a heather-honey which differs in colour, consistency, and flavour from the ordinary honey sold as flower-, fruit-, or clover-honey, and which finds a ready market at a price of from 25 per cent. to 100 per cent. in advance of that of other honeys.

This honey is produced from one source only, namely, common ling (*Calluna vulgaris*). Its consistency is peculiar to it alone, and it does not run when cut, for the contents of each cell are distinct hexagonals of delicate jelly. Its smell and flavour, which the uninitiated consider strong, are those of the aromatic odour of the flowering ling. Its colour is a wonderful amber which is brought into marked contrast by the surrounding snowy-white opaque cell-walls and cappings.

It is found that there is a difference between this honey if produced north or south of the Tweed, that produced further north being stronger in flavour and darker in colour. Even the honey gathered from two moors, one ten miles north, and the other ten miles south, of the Tyne, shows a difference in these respects.

We have from time to time seen references to heather-honey produced on the many moors in the Midlands, the South, and the South-West of England, and have also seen advertisements of such honey to be sold at the price of clover and other "flower" honey. We have tasted some of this honey, when opportunity has arisen, and have detected in it none of the peculiarity of taste which gives our Northern heather-honey its charm, nor have we noted the aromatic scent so suggestive of a day on the moors. Our impression was that the two entirely different flavours were determined by "locality"—that word so much used by bee-keepers. We thought that ling, to produce its true bouquet, must grow at certain altitudes and north of a certain latitude.

This year we had a hive on the moors during July, when the two bell-heathers (or heaths) and wild thyme were in bloom. The honey produced from these sources was indistinguishable from that produced later from ling in its colour and in the whiteness of its wax, but the smell and flavour were quite different, and when cut it was not a jelly, but ran as freely as clover-honey. It reminded us at once of some honey purchased at the "Royal" Show at Newcastle in 1908 labelled "Pure Derbyshire Heather-honey," which was, as far as our recollection goes, identical with this bell-heather and wild-thyme honey. Other southern heather-honeys which we have tasted had a like flavour. The question therefore occurs to us: Is ling a source of nectar in the South, or is the heather-honey produced by Southern bee-keepers from the heaths and wild-thyme only? (These latter plants in the North flower at the same time.)

Perhaps, Mr. Editor, from your vast experience you will kindly throw light on this subject, and tell us whether Northern and Southern bee-keepers mean by heather-honey one from the same source, namely, ling (*Calluna vulgaris*)? Enclosed are two samples: No. 1 from bell-heather and wild thyme, and No. 2 from ling only—both produced at the one moor, and which, though similar in external appearance, differ entirely in the other points which we have mentioned. No. 1 was produced during the latter part of July and the beginning of August, and No. 2 from August 12 onwards.—MEDICUS. Newcastle-on-Tyne.

[When heather-honey is obtained from ling we have seen it quite as jelly-like south of the Tweed as north, but usually there are other flowers blooming at the same time which probably change its character. Honey collected from bell-heather is also commonly designated heather-honey, and in the honey competitions both sorts are usually shown in the same class. Of the honey samples, No. 1 was so thin in consistency that it had all run out of the comb. No. 2 is a good sample of ling honey, though not so strong in flavour or of such jelly-like consistency as some English heather-honey we have seen.]

ROSS-SHIRE NOTES.

[7927.] The honey season, although wet, has been fairly good in the North. Results differ widely, even in adjacent districts, some bee-keepers reporting a smaller surplus than that of 1909. Mr. A. Reid, Balloan, has had excellent results from his improved hives, the best stock giving over 80 lb. surplus.

Personally, I was less fortunate, as although bees worked well between showers, storing in three and four supers, there was nothing approaching a three-figure take.

About fifty completed sections were the limit this season. Good sections are scarce and in demand at 12s. the dozen—last year's price.

Heather Methods.—I should like to hear whether "Medicus" and other exponents of the divisible hive met with good success at the moors. Here, August opened favourably, with heather in full bloom, hives full of brood, and bees strong, occupying two supers. Everything pointed to a grand heather-yield, but just when bees were busiest St. Swithin the tearful asserted himself with amazing vigour, washing all our hopes away in torrents of rain. The result was a large number of unfinished sections, a few dozen completed ones, and brood-frames well stored for winter.

I was unable to give the new method a trial this season, but can fully understand that heavy supers may be secured in the manner so well described by "Medicus" (B.B.J., page 504, vol. xxxvii.). The theory of the "divisible" hive is easily understood.

A large, deep brood-frame with a good queen will produce an immense population of workers, but there is a chance of their neglecting the supers for brood-nest storage. At the moors this chance becomes a certainty. With a double set of shallow frames her majesty has equal facilities for rearing a large family. Just previous to the honey-flow the brood-nest is contracted to a single story, with the surplus brood placed over the sections, only a small communication being given between. As the young bees hatch out they find their way below, and strengthen the working force. This scheme ensures more brood, more bees, *and* more honey—in the right place.—J. M. Ellis, Ussie Valley.

FOUL-BROOD LEGISLATION.

[7928.] About sixteen years ago I started to keep bees in Surrey, and spent £10 on bees and appliances. Foul brood spread over Hampshire and Surrey. I fought it by the best methods I could hear of at the time, but after three years all my bees died, and there was hardly a bee-keeper left in the two counties. I had 5 lb. of honey for my outlay.

On coming to Sligo eleven years ago foul brood was prevalent around Sligo Town. Eventually nearly all the bees died. In most cases the bee-hives were left just as they were. I told several of the bee-keepers they ought to disinfect their hives, but they would not take the trouble, and as there was no Act then to compel them to do it the infection had to die a natural death.

Now we are blessed with an Act, if a bee-keeper refuses to disinfect his apiary he receives a notice to burn his bees, hives, and appliances, and has to do it in twenty-four hours. One lady kept bees, but got badly stung, so was afraid to look at them, although several times approached by bee-keepers with offers of assistance with her bees. They were neglected and not looked at for two years, till the inspector called, and, being armed with authority, he could inspect them without permission from the owner. Another case I came across before the Act was passed was that of a bee-keeper who had a bad case of foul brood in his apiary. He refused either to sell or try to cure the bees, or do anything to prevent the infection from spreading. There are cranks in England as well as in Ireland, and if a few bee-keepers like the above settled in Mr. Woodley's district, within a very short time his would be one of the loudest voices for legislation.

Our chief trouble in Ireland is to find enough suitable instructors, and as they have to look after both horticulture and bee-keeping in a widely-scattered district, some prefer the horticultural work best, so the bee-keeping is apt to be overlooked, and *vice versa*.

We cannot expect new machinery to work smoothly at first, but where we have a competent inspector the general public are not afraid to keep bees. Take County Fermanagh, for example. You find nearly every other house with two or three hives.

Mr. Samways says bees cannot be isolated like swine, dogs, and cows. There I think he is distinctly wrong. You can isolate a hive by placing a gauze tent over it, or you can at least prevent its being robbed and so spreading the infection. Mr. Samways misunderstands the working of the Irish Act. If the owner treats his bees he receives advice; it is only where he does not carry out instructions that he receives notice to destroy them. If bee-keeping were in the hands of a few men who made their living by it alone, legislation would be unnecessary, as for their own benefit they would keep the bees healthy; but there are a number of people who start a hive or two, then get stung, and are afraid to go

(*Continued on page* 398.)

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

Mr. Julian Lockwood is a promising young bee-keeper, the story of whose success with the bees cannot fail to interest, while his modesty in telling it arouses admiration. Though only sixteen years of age, he has already proved himself as capable as many adults of running an apiary on business lines, and he has ambitions to climb still higher and to become a qualified professional bee-keeper. In his interesting account of his experiences he says:

"I started bee-keeping in September, 1900, my father buying a stock in a 'W.B.C.' hive from Mr. H. Beswick, expert and lecturer to the Norfolk County Council. This was the outcome of some lectures given by Mr. Beswick in my father's schoolroom. I was only six years old at that time, and for the first four or five years I helped my father with the bees, our chief trouble being their excessive swarming, which we were too inexperienced to prevent. Out of two bar-frame hives and one skep we got eleven swarms.

"After about five years I took sole charge of the apiary, and have succeeded very well, having for five years in succession taken over 100 lb. from the original hive. In 1908 I secured 140 lb. from it—my highest 'take' so far. Of late years I have been going in for more advanced bee-keeping, queen-rearing being particularly interesting to me. I rear all my own queens, and unless they show signs of prolificness get rid of them after the second year. I also make my own hives, mostly after Taylor's pattern, though I consider no hive can beat the 'W.B.C.' I have been very successful with the 'Wells' system, finding also that the bees readily take to the supers in 'Wells' hives, owing to the extra warmth from the two stocks being together. In the winter months I read the BEE JOURNAL and *Record*, and from them I have gained much valuable information. The books I have found most useful are the 'Guide Book' and Simmins's 'Modern Bee-Farm.' In the autumn of 1908 I bought a Carniolan queen, and in the following spring the stock to which I introduced her proved to be the best I had.

MR. JULIAN E. LOCKWOOD'S APIARY, HUNSTANTON NORTH, NORFOLK.

It yielded 40 lb. of comb honey, and threw off a prime 7-lb. swarm. I also made a three-frame nucleus from it. As the Carniolans had done so well, I thought I would try some Italian queens. These have so far proved a success. One I introduced to an artificial swarm covering five frames in May last has given 40 lb. surplus honey. I have no difficulty in disposing of my honey; it is generally sold before it is an hour out of the hive at 10d. per lb., and my only regret is that I cannot supply enough. To meet the demand I am increasing my apiary, and now have about twenty hives, which I hope will yield a heavy surplus next year. I have been lucky enough to have avoided disease so far, and hope I shall still go on without it: but for all that I

am greatly in favour of a Foul-Brood Act, and I am willing to do my utmost to assist in making it law. In the photograph you will notice two skeps. These I keep for natural swarms or in case a stock in a frame-hive should die. I may say that I have never lost a stock through all my ten years' bee-keeping.

"My apiary is beautifully situated, being protected on all sides. The photograph shows just one corner with my first hive, the 'W.B.C.' Last autumn I joined the B.B.K.A., and intend joining the North Norfolk Association next year. I am now sixteen years old, and hope in a few years to go in for the bee-business professionally. I also hoped to obtain an expert certificate this year, but circumstances prevented my entering for the examination. However, I intend to try at the first opportunity."

("*Foul-Brood Legislation*," *continued from page* 396.)

near their bees again, and who do not know disease has attacked them till they are nearly all dead and have infected those of the district around.

I have nearly always found, when a person objects to his premises being inspected, he has something to hide. Trusting you will soon have a Bee Act in force in England.—H. QUINTON, Co. Sligo.

[7929.] I for one very gladly welcome such a common-sense letter as that from Mr. Samways in B.B.J. of September 22 (page 378). Reasonably or unreasonably, one gets the impression that only one side is presented to bee-keepers on this vital question, and one becomes more and more impatient of those writers who seem unable or unwilling to see a threatened calamity in the Bee Diseases Bill, which so many practical bee-men see well, but are too busy to write about. This threatened calamity of the "destruction" of the perfectly-wholesome products of slightly-infected bees has been clearly put by Mr. Samways.

No practical bee-man producing honey on a large scale uses a different extractor and other implements for each hive, or keeps the produce of each individual hive separate and unmixed, and Mr. Samways' admirable letter shows how one diseased stock may in this way cause half a ton or a ton of good, wholesome honey (possibly fit for the show-bench) to be condemned under Clause 7 and consigned to destruction. Are bee-keepers, then, ever going to admit such a disastrous clause into the Foul Brood Bill? It is madness to destroy wantonly tons of the most wholesome food in the world. Let bee-keepers unite as one man and say, "Never shall it be done."

There is a sentence in the foot-note to Mr. Woodley's letter in B.B.J. of August 4 of which I must complain. It reads: "If 10 per cent. are diseased, it is quite right that the product of such diseased colonies should not be scattered over the country to contaminate others." Now, Sir, is such a statement either just or true? I was under the impression that honey was produced for human consumption, as its intended object and attained effect. But we are given to understand by this foot-note that honey is produced and sold for the purpose of feeding bees, and that if 10 per cent. of honey is infected the whole of that amount infects other healthy stocks. Is not this utterly untrue in fact, unjust in implication, and absurd in statement? Allow me to suggest that if 10 per cent. of hives are infected, quite possibly 50 per cent. of honey is unsafe for bee-food, but yet not one drop in a ton of honey that is sold ever gets back to a bee again, and if it does that one drop will do no harm. A bee-keeper who buys honey to feed to his bees is either near lunacy or reckless, and deserves trouble if he gets it. Where is the analogy between swine fever and foul brood—seeing that in the one case infected honey is perfectly wholesome for human beings, while infected swine-flesh is entirely unwholesome for them? I am strongly in favour of compulsory legislation, but for destruction of honey *never*, and I would entreat bee-keepers not to lose their common sense in the matter, nor for the sake of getting legislation of some sort submit to endure the unspeakable disaster of Clause 7 if it becomes law. It is madness to contemplate it: it will be ruin to experience it.—F. GORDON, Expert Cambridge and District B.K.A.

[It is hardly fair to suggest that only one side of the question is presented, for the B.B.J. has endeavoured to be impartial, and has allowed a free discussion of the subject, but in a paper of this sort such discussions have to be kept within limits. No one has yet been able to show that the calamities which they predict for bee-keeping in this country if legislation is adopted have taken place in other countries where bee-keeping is carried out on a much more extensive scale than it is here. Why, then, should we not derive the same benefits from legislation? It is quite certain that the industry cannot go on much longer unless some steps are taken to check the spread of disease. It would certainly be wrong for a bee-man to mix honey from a hive he knew to be diseased with other honey, even though

it may not be injurious to human beings. If he uses his extractor or appliances in the way suggested without disinfecting them, it is not surprising that disease is spread, and only legislation can counteract such carelessness in propagating foul brood. Bee-keepers do not buy honey for feeding bees, and it has never been suggested that they did so; but our correspondent must know that bees rob, and any honey they carry away from a foul-broody hive may give the disease to the robbing colony. Our correspondent may rest assured that the proposed Act will be thoroughly considered, and, if necessary, modified, before it becomes law. No legislation, however, is likely to be carried unless there is a demand for it.—Ed.]

CHLORIDE OF LIME FOR FOUL BROOD.

[7930.] I shall be glad if you can afford me space to answer "C. H.'s" (Haslemere) letter (7910, page 366), and to express my sincere regret and sympathy with him in his loss.

To prevent further losses, I should also like to give more definite explanations. 1. A small hive is one with a capacity for ten frames and a dummy. 2. A medium hive one with a capacity for twelve frames and dummy. 3. A large hive one with a capacity for fifteen frames and dummy. A small teaspoon is used, but as they differ so much, the following weights will be safe, if the proper conditions for internal ventilation are provided for. For ten-frame hive 35 grains, for twelve-frame hive 40 grains, for fifteen-frame hive 50 grains. I have great faith in fresh air, and treat my bees as I should myself. Give plenty of fresh air without draughts.

When I arrange my coverings, I do *not* cover up the last $\frac{1}{8}$ in. or $\frac{1}{4}$ in. behind the dummy; nor do I completely block up the side farthest from the entrance, so that fresh air is always passing along the floorboard behind the dummy, and upwards out through the ventilators of roof, of which I use more than is generally considered necessary. Except for these differences, I use plenty of wrappings—pile them on.

Again, except in windy or very cold weather, I do not replace the piece of wood in plinth.

The probable reason for death of bees is, in my opinion, the following: Chloride of lime gives off a gas—chlorine—heavier than air; in fact, it is 2.45 times the density of air. It will therefore be found near the floorboard, but with the heat of the hive it expands, and gradually rises amongst the combs in a rarified condition. Now, having a current of air passing along the floorboard, a large accumulation of this gas or chlorine is prevented, but—and please note well—a hive being supplied with sufficient wrappings over the frames, with every chink carefully stopped, to prevent all movement of the internal atmosphere of the hive, except such as is made by the bees fanning, the chlorine must become dense near the floor and lower part of the combs; hence the bees in those positions must be soon poisoned. Especially since the nights have become cold, and the bees cluster in a half dormant state, may these results be looked for.

With reference to the hive which was most diseased, and the bees remained uninjured by the chloride of lime, I certainly believe the fact of much extra fanning to keep out the smell of foul brood prevented the accumulation of chlorine in excess.

Why the Queens Were Not Killed.—If what I have said has truth in it, we need not seek further for the reason. The denser gas did not rise to any great distance up the combs, and the queens, being near the middle or upper parts, were safe for the time being.

However, I should advise others to use a smaller quantity in their first trials, as the conditions of their internal arrangements may not be so airy as mine.

Again, my device described on page 316 is such that one may use any disinfectant preferred. Very small hives must be dealt with in a proportionate manner.

Trusting there will be no more losses, and thanking you, Mr. Editor.—Chas. J. Ashworth, Heytesbury.

[7931.] A correspondent in B.B.J. for September 15 (7910, page 366), in trying the above as recommended by Mr. Ashworth (7879, page 316), met with a sorry failure. Having foul brood in one of my hives, I decided to give the chloride of lime treatment a trial; but, rather than go to the trouble of altering the hive in the way Mr. Ashworth suggested, I simply cut a hole in the floor-board, outside which I placed a tin can nailed bottom upwards. The lid holds the chloride of lime, and some good-sized holes in the bottom of lid admit gas into brood-nest. I am pleased to say the bees have not shown the slightest disturbance, and the disease appears to be getting much less pronounced, there being fewer bad cells every week. I have of course fed them on medicated syrup. In my opinion the chloride of lime is not harmful to the bees if it is placed far enough away from them. Of course in Mr. Ashworth's plan it would be very near the bees.—S. Brinsley, Olton.

[7932.] In reference to the correspondence on this matter which has appeared in recent issues of the B.B.J., it would be interesting to know whether the chloride of lime used by the writers in question was obtained in packet form or loose, the latter being considerably stronger than the former.—H. B., Berks.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Bee-hive as Incubator (page 359).—The enthusiasm of the experimenter is perhaps responsible for some injustice to the hen, or rather to the "eight hens." For a common or barndoor fowl can hatch strong chickens in precisely the same time as the best incubator, and eight hens can surely produce more in three weeks than the most intelligent bee-hive, clock it never so loudly, or however warm the ticking. And if "twenty eggs" represent the capacity of the super, it would have to work for nearly six months to produce eight "clutches," whilst it is not every poultry-man who wants his chickens distributed over that period! Let us be just, my masters, though the heavens fall! It will be noted by the aggrieved hens that two of the hive-ripened fruit did not produce chickens, and that the chicks were "as strong and healthy as those from the incubator." But were they as strong as chicks hatched under some silly old hen? And what *did* the two eggs produce? Those desirable hybrids between fowl and bee, which are to lay eggs all day long in little hexagonal-celled travelling-boxes?

Upward Comb-building (page 367).—Does not this phenomenon occur more frequently than is generally known? I have often seen specimens under candy-boxes, bell-glasses, and the like, and occasionally upon the top of an uncovered frame beside a super. This week I removed a strong colony from the interior of a wooden porch over a doorway, and found in an upper cavity several fine specimens of wide-spaced and fat honey-combs, in section somewhat like a sugar-loaf.

Bee-venom (page 368).—This highly interesting and informing article of Mr. Bullamore's is worth perusal, and before questioning any part of it I must express, as grace before meat, my thanks. If the dried venom be neutral, the process of desiccation must evaporate the acid, and the argument is therefore, I take it, that the acid is of little or no effect. But what then is its use? And how is it certain that the physiological effects of the neutralised poison are the same? Does Mr. Bullamore deny that the poison contains formic acid? Bee-poison, as used by the bee, is not neutral, but acid, the "strongly acid" contents of one secreting gland more than neutralising the "feebly alkaline" contents of the other (see Cowan, "The Honey-Bee"; Girard, "Les Abeilles: Organes et Fonctions": and Carlet, "Comptes Rendus"). My very cursory description is admittedly a popular and incomplete statement, but if, as Mr. B. asserts, we do not know the other constituents of the poison, how shall I satisfy my critic? Shall I amend the casual definition to "Formic acid and Co.," or will "Etc." meet the case?

Are All Eggs Alike? (page 368).—I take it that Mr. Bullamore's point is that all eggs are alike (i.e., male) in the ovary, whether of fertile worker, drone-breeder, or fertile mother. (My own view is that drones do not lay eggs.) But this point was not, I think, so clear in his article, for he appeared to suppose that feeding was responsible for the differentiation. As this is clearly not the case, "my own view" is that he is correct in adhering to the teaching of the text-books.

Fact or Fun? (page 368).—It is curious that one who is evidently in touch with up-to-date sources of information, and who easily rejects the older technical conclusions, should yet feel obliged to go back to the fathers for his jokes. I should have expected that just as he gives the younger scientific theorist a respectful hearing, so he would be tolerant of the would-be purveyors of nonscience, though they seem to toddle never so aimlessly along blind trails in their endeavour to climb the heights. He should remember that where the near-by pasture has been well worked the later foragers must go further afield, to possibly fare worse. Amongst the many who, foolishly enough, venture from time to time upon "little pleasantries" at the expense of our sacred hobby I must confess myself. And Mr. Bullamore's scathing denunciation of those who rush in where he fears to tread finds me thoroughly scathed and scarified. So that I trust he will be content, and spare us fools, until we recover and can bear another shock. But for the life o' me I cannot understand why he should waste time upon such frivolous matter. He implies a desire, incredible as it may seem, for humour by old and tried authors—jests by Joseph Miller, no doubt, and, if bee-jokes are permitted at all, Virgil perhaps. But as this foolish column does not meet his needs in that respect, he must, an he read it at all, read it for the "facts" which it may contain. (I trust he is not, only too often, disappointed.) So that Mr. B. will be willing to allow me equal selective privilege of hunting through his matter, "just for fun," if not for fact. Having said so much, may I further soothe him by con-

fessing that I have derived much profit from the results of his more serious studies? After all, both fact and fun are necessary to a liveable life, although over-pursuit of either may be foolish. Just as it is possible to carry a jest too far, so there is danger of being blindly led into materialistic rut. And the valley weather is too often of a tearful character, so that we adventurous fools may be forgiven somewhat if we get into dangerous places in search of sunshine above the frowning clouds.

CONSULAR REPORTS ON HONEY AND WAX TRADE.

We are indebted to Mr. G. W. Judge for the following interesting extracts from the Consular reports (1909) for the district of Hamburg, Germany, and also of San Francisco, California:

Honey.—In spite of the repeated failure of the harvest in Chili, the imports exceeded those of the previous year by 25 per cent. This large amount was nevertheless readily disposed of in the first ten months, for the German output of honey was again unusually small. The total imports into Hamburg were estimated at about 70,200 cwts. (56,551 cwts. in 1908). The imports from Jamaica were 4,321 cwts. (2,375 cwts. in 1908). There was a large increase in the supplies from Hawaii (2,455 cwts.) and from France (3,339 cwts.).

Wax.—Business in beeswax was entirely satisfactory, and the supply, which was about 10 per cent. larger than in the previous year, found a very ready sale. East Indian wax was noticed for the first time this year. It had previously been described as insect wax, but is now ascertained to be the product of a sort of bee (*Apis dorsata*). The total imports by sea are estimated at about 43,700 cwts. (39,344 cwts. in 1908). The supply of carnauba wax was nearly double that of the previous year, amounting to 42,232 cwts., and consequently prices for this substance fell gradually, and the many substitutes were in little demand.

EXTRACT FROM CONSULAR REPORT FOR THE DISTRICT OF SAN FRANCISCO, CAL.

There is said to be more than 8,000 people in Southern California engaged in the handling of bees and their products. About 3,000 of these own their own apiaries, and are engaged in the production of honey solely for commercial purposes. There are a number of apiarists who have over 1,000 hives, and owners of 500 are common. Estimated yield of honey for 1909: Extracted, 11,100,000 lb. = 370 truck-loads; comb, 432,000 lb. = 15 truck-loads.

Bee-Shows to Come.

October 20 and 21, at Kilmarnock.—Honey Show in connection with the Ayrshire Agricultural Society's Show. Liberal prizes. Schedules from John Howie, 58, Alloway-street, Ayr. **Entries close October 7.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

L. T. (Brentwood).—*Grubs in Hive.*—Probably those of a species of *Dermestes*, the grubs of which are omnivorous, and feed on almost anything they can get hold of. The fragments of bees, including well-skeletonised sting and legs, show that they have been feeding on their dead bodies and have rejected the harder chitinous portions. It is difficult to say why they should have got into a populous hive, but probably dead bees on floor-board have attracted them.

J. J. R. (Swansea).—*Queen-cell in Hive.*—1. Bees do not usually construct queen-cells at this time of the year if they have a queen. 2. Colonies should have about 30 lb. of stores for wintering.

W. Bee (Yorks).—*Bees with Yellow Band.*—1. Probably the young queen has mated with a hybrid drone. 2. They may possibly winter, but they are too weak to make good colonies even if they survive. We would advise you to unite them and make one good colony with the three lots. 3. Place the combs containing the least syrup in the centre. The bees will make use of these combs first, and will then have the necessary clustering space. Feeding should be finished now. 4. Remove the dead bees from the cells that have failed to hatch, as they may be a nursery for disease germs.

Inquirer (Renfrewshire).—*Queen Taking Wing.*—1. Young queens, although fertilised, may sometimes take wing, but if the hive is not closed will return again. 2. Wintering more than one queen in the way you propose rarely succeeds, as one of the queens is almost sure to be missing in spring. 3. There is no occasion to cage the workers with the queen.

C. A. (Haughley).—*Cane-sugar for Bee-food.*—The proper kind to use is white crystals or lump cane-sugar. Brown sugar is not suitable for winter, although it may be used in spring.

Inquirer (Olton).—*Bees Not Capping Stores.*—1. In order to get bees to cap their stores rapidly, the colonies should be strong, the syrup thick, and given

in large quantities warm. 2. We have received no bees.

J. W. S. (Wembley).—*Using Old Combs.*—We should not advise you to use the combs. Melt them down, and fit up the frames with full sheets of foundation in spring. It is false economy to give bees the task of clearing out either dead brood or dried pollen, and neither can be removed by means of the extractor.

H. S. (Manchester).—*Feeding Driven Bees.*—All the holes in bottle-feeder should be used, but it would be a much better plan to put on a rapid-feeder. Continue feeding till there is about 30 lb. of stores, *i.e.*, eight combs well filled.

J. R. (Welwyn).—*Name of Bee-plant.*—The plant is one of the *Papillionaceæ*, but it is impossible to say which species, as the specimen shows only dried and crumpled leaves and no flower. If you send a specimen of the flower we shall be pleased to give the particulars you ask for.

Inquirer (Stockport). — *Stock Found Dead.*—The bees have died from starvation, as is indicated very clearly by their condition, and the number found dead head downwards in the cells.

W. J. C. (Thanet).—*Cause of Death of Queen.*—The queen has been injured mechanically, the second segment of abdomen showing signs of having been crushed.

Norwich. — *Queenless Stock.* — Yes, requeen now if you are sure the stock is queenless.

Worker-bee (Warwicks).—*Supply of Food for Winter.*—1. Yes. 2. You can measure it in the way you propose. 3. You might use them, but it would be the best plan to melt down the combs, as they might spoil the colour of your honey next year.

Puzzled (Forfar).—*Parasites on Queen-bee.*—The reddish-brown "lumps" are most probably insects known as *Braula cæca*, or blind louse, a parasite which sometimes infests both workers and queen. Fumigating with tobacco smoke is the best way of getting rid of them. They will drop on to the floorboard, and can be brushed off. The floorboard should then be washed with a disinfectant such as Izal or carbolic acid.

Trouble in Beds. (Sharnbrook).—*Charlock Honey Granulating.*—1. Charlock honey usually granulates very rapidly after it is stored, and shallow frames should be removed as soon as the flow ceases, even if they are not completed. It is not at all unusual for it to granulate when unsealed. The cool weather no doubt caused it to granulate sooner than it might otherwise have done. 2. You cannot remove the honey without melting the combs.

Honey Samples.

J. T. (Barnoldswick).—The sample is of very good flavour, colour, and aroma. It is a heather blend, as it cannot be called absolutely pure heather honey, there being a slight admixture from another source. It is quite worth 1s. per lb.

W. B. (Sheffield).—Heather honey. The previous contents of the bottle have contaminated it and partly spoilt the flavour, which we should imagine was originally very good, judging from the quality on other points.

Sutton-in-Ashfield.—A very nice clover honey smoothly granulated. Quite good enough for showing.

Suspected Disease.

M. K. H. (Alton).—Feeding will put the matter right. The stomachs of bees sent are absolutely devoid of food.

G. M. (Plymouth).—There is no disease in the comb. It contains chilled brood only, which upon becoming dry has been attacked by a tiny mite. No doubt from your description the bees have suffered from paralysis.

Bowydd (Wales).—Both samples of comb are affected with foul brood.

J. B. (Weybridge).—Bees are suffering from "Isle of Wight disease." Destroy the stock at once, burn combs, and thoroughly disinfect the hive.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on October 6 at 23, Bedford Street, Strand, London. Mr. T. W. Cowan presided, and there were also present General Sir Stanley Edwardes, Messrs. W. F. Reid, T. Bevan, A. G. Pugh, O. R. Frankenstein, R. T. Andrews, E. W. Walker, J. B. Lamb, E. Garcke, A. Richards, E. Stoneham (Crayford), G. Hayes (Notts), W. W. Falkner (Leicestershire), Captain F. Sitwell (Cheviot and Tweedside Border), and W. Herrod (secretary).

Letters expressing regret at inability to attend were received from Miss Gayton, Miss K. M. Hall, Messrs. G. W. Avery, G. H. Skevington, and Colonel H. J. O. Walker.

The minutes of the Council meeting held on September 15 were read and, with an amendment making the amount of grant asked for from the Treasury under the Development and Road Improvements Funds Act of 1909 £2,000 instead of £1,000, were confirmed.

The following new members were elected: Mr. E. L. Harvey, 120, Telephone Road, Southsea; Mr. J. G. Wainwright, Norncy Grange, Godalming; Mr. J. E. Smiles, Wilmington, Dartford; Mr. F. Vogt, 38, Clementina Road, Leyton; Mr. F. C. Mason, Orford, Moreton End, Harpenden; and Mr. J. Southwell, Bridge View, Lockerley Green, Romsey, Hants.

The report of the Finance Committee was presented by Mr. T. W. Cowan, and it was resolved that payments be made amounting to £21 13s. 6d. The receipts for the month of September amounted to £28 14s. 7d., and payments to £34 13s., leaving a balance in hand of £108 19s.

It was resolved that the "W. B. Carr Memorial Fund" of £63 15s. be invested in Consols.

Arrangements were made and judges appointed for the "Royal" Show at Norwich in 1911.

It was proposed by Mr. Falkner, seconded by General Sir Stanley Edwardes, and carried, that the rule applying to lacing of sections apply to the trophy class in all shows over which the B.B.K.A. have control.

The reports on third-class examinations held at Salisbury and Shrewsbury were received, and it was agreed to grant certificates to the following: Miss K. E. Harwood, Messrs. C. J. Phelps, W. R. Cayler, H. C. Spratling, J. Southwell, R. Holland, J. W. Mason, J. Storey, F. C. Kelly, and the Rev. Dr. E. Rowlands.

The next meeting of the Council will be held on November 17.

THE CONVERSAZIONE.

This was held at the "Eustace Miles" Restaurant at 5 p.m., when about sixty members and friends assembled. Refreshments were provided in the reserved balcony, after partaking of which the company adjourned to the Green Salon, where Mr. T. W. Cowan presided over the Conversazione. Just one hundred were present, amongst whom were the following:—

Mrs. A. Chapman, Mrs. Pearman, Mrs. W. S. Darby, Mrs. Helmsley, Mrs. Herrod, Mrs. R. M. Price, Mrs. Geo. Garratt, Mrs. Towers, Misses C. Carr, L. M. Carr, Kate Barry, H. H. Turner, A. M. Holland, E. Scott-Walker, L. Shepheard, General Sir Stanley Edwardes, Dr. H. W. Waller, Captain Sitwell, Dr. T. S. Elliott, Messrs. R. T. Andrews, F. A. Allchin, E. J. Brown, W. E. E. Brignall, T. Bevan, A. E. Biggs, W. Boxwell, B. E. Buckwell, J. H. Bell, G. Bullamore, E. F. Dant, S. Dickenson, F. Dickenson, W. Emerton, O. R. Frankenstein, Geo. Franklin, E. Franklin, A. C. Fell, W. W. Falkner, J. T. Fitch, F. W. Frusher, E. Garcke, W. J. Goldsworthy, A. F. Grice, K. M. Goffin, Laurence Goffin, Geo. Garratt, Geo. Hayes, C. Hayes, Robt. Hefford, C. Islip, G. W. Judge, P. W. S. Jefferies, E. F. Kettlewell, E. R. Kettlewell, C. Kettlewell, J. B. Lamb, J. C. Mason, S. Moon, Geo. Mason, W. P. Meadows, A. G. Pugh, A. E. Paul, C. Weaver Price, J. Pearman, G. Palin, E. H. Pankhurst, B. Percival, W. F. Reid, A. Richards, G. Rogers, V. Eric Shaw, G. H. Sander, A. E. Smith, T. E. Stone, W. Sole, A. Stapley, E. R. Seadon, J. E. Smiles, A. W. Salmon, Ed. Stoneham, E. D. Till, E. N. Tremless, G. Trimmings, E. Walker, A. Willmott, E. Watson, J. F. L. White, G. Walker, T. W. White, Wm. Woodley, A. D. Woodley, W. Ward, F. W. Watts, E. G. Walker, E. L. Watson, and W. Herrod (secretary).

The Chairman (Mr. Cowan), after briefly opening the proceedings, called upon Mr. Garcke to read his paper on "The Keeping of Records in the Apiary."

Mr. Garcke: Bee-keeping affords scope for a variety of interests — whether pursued for scientific research, profit, or recreation. Bees provide not only delicacies for the table, work and materials for various crafts, but also problems for the scientist and the philosopher. The biologist, the chemist, the microscopist, and many others find attractions in bee-keeping; and these interesting branches of apiculture have been ably treated by numerous authors. In the voluminous literature of bee-culture, however, little more than passing references are found to that aspect of the subject which is of special interest to the man of

affairs. I refer not so much to the wonderful discipline of the hive, although that is of interest to captains of industry as well as to social architects, but rather to the organisation and systematic methods which the bee-keeper is able to practise in the management of his apiary.

A system of apicultural records to be perfect must be serviceable to the scientific investigator, economical for the business man, and entertaining to those who keep bees for pleasure, and the system must be practicable alike for the small and for the large apiary. Every business man knows, or soon realises, that account-keeping which is commensurate with the character and extent of his business, while not perhaps productive of direct profit, has advantages altogether outweighing its cost. The records, however, which may be interesting or instructive in the case of a few experimental hives would certainly not be profitable, even if possible, in the case of a large apiary conducted with a view to commercial results. On the other hand, a large apiary requires facilities and aids to memory which are not necessary in the case of two or three hives, every detail of which can be seen in the mind's eye. It must further be remembered that many bee-keepers are persons of small means, and that book-keeping is regarded by many as a mystery. Therefore any system of records to be generally serviceable must be both cheap and simple.

The fundamental difficulty of making apicultural records is that in order to secure the fullest advantages of modern practice in bee-keeping it is essential that every part of a hive should be interchangeable with the corresponding part of another hive, that the queen should be transferable, and that the stock of bees should be both divisible and capable of being united with another stock. The consequence of these conditions is that the same component parts of the colony, consisting of queen, workers, drones, hive, frames, and supers, do not for long remain together; under conditions of modern bee-keeping they are not collectively in permanent association, while separately no one part of the combination can serve for identification of the other parts. It is suggested by some that the hive should be numbered and that its number should form the basis of the records. Cheshire and others, however, prefer that the records should centre around the queen. But a consideration of the nature of the parts of the combination will lead to the conclusion that neither the hive nor the queen can alone provide a satisfactory basis for the desired records. It is worth while to examine this aspect a little closely. The hive is a movable shell, consisting of several parts all of which should be transferable. Confusion very soon results from the attempt to identify the queen, the bees, and the frames by the hive number. That number can serve no purpose other than to identify the hive itself. Nevertheless, it is well for various reasons to number the hives consecutively; but it is soon found that the hives do not long remain in consecutive order. The question of whether the queen can by a title be made to serve the purpose of identifying the colony with a view to the keeping of proper records would, at first view, appear to admit of an affirmative reply. The queen undoubtedly approaches this purpose nearer than the hive. The queen exercises an important and enduring influence upon the colony, but nevertheless she cannot be regarded as inseparable from the other members of the colony. Her environment can be changed at the discretion of the bee-keeper, and such change produces the most far-reaching modifications in the colony from which she is removed and in that to which she is transferred—modifications which it is necessary to ascertain and to record if it is desired, scientifically, to trace causes and to demonstrate effects. We need not stay to consider whether the combs or bees will serve the purpose we have in view any better. The combs are cradles and store-rooms which are also movable, and the bees, as a stock, do not admit of accurate definition without a queen, and, although a queen is necessary to give permanence to a colony, any fertile queen will do—subject to proper introduction.

It would be unsound to say that the difficulties of recording can be overcome by avoiding complicated combinations. Routine must be the accompaniment, not the controller, of progress, and records must follow, not direct, operations.

It is necessary that the colony should be identified by something that is fixed and immutable in its relations to the other parts. The stand occupied by the hive will answer this purpose best, as it is constant in its relation to the queen, the hive, and the bees, although all or any of these may be removed from the stand.

The symbols I suggest are a number for the stand, a title for the queen, a number for the hive, and a number for each frame. The numbers of the stands should be consecutive and unchangeable throughout the year, but there is no objection to the whole of the apiary and the numbers of the stands being rearranged at the beginning or close of the season. One of the objects in view is quickly to locate the whereabouts from time to time of particular colonies. With only a few hives a mental note is no doubt sufficient, but in an apiary comprising a large number of colonies the stands should be actually numbered in some convenient way, but the numbers of the stands should attach

to the sites and not to the hives. Where there is room, stands should be some feet apart so as to enable nucleus and temporary hives to be placed between, and odd numbers should be used first so as to leave the even numbers available for the hives subsequently placed between. As titles for the queens we may select any favourite names. An appropriate collection of titles is afforded by the bibliography appearing at the end of Mr. Cowan's book on "The Honey-Bee." The first queen in an apiary might be called Q. Avebury 1 (1910), and her daughters Q. Avebury 2, 3, 4, 5, with the year of birth in brackets. If the next Q. Avebury is a daughter of, say, Q. Avebury 2 she is named Q. Avebury 6, no distinction being made between the generations, but these can be shown by a small genealogical diagram on the cards presently referred to. The title "Avebury," with consecutive numbers, would thus be used to designate all regal descendants of Q. Avebury 1.

The title of the next series of queens (not being descendants of an Avebury) commences with B., the first of that series being, say, Q. Bevan 1. The third series is named, say, Q. Cheshire 1, 2, 3, and so on. A different title is adopted for each strain of queen and a different number for each queen. A list of the queens should be kept arranged in alphabetical order. Drones can, if they are known, be specified by using the title of the mother-queen, thus—D. Cheshire 1.

Having provided the queens with titles and given numbers to the hives and to the stands, we want to record the condition of the colonies from time to time. These records are made on the outer case of the hive. All the hives are painted white or stone-colour; the front of the hives may be painted red, blue, or any other colour, but that has no bearing on the records. The back of the hive is reserved for particulars of the queen, one side of the hive for particulars of the frames and racks, the other side is used for the records as to the condition of the stock, whether diseased, strong or weak, &c. Both sides of the hive are marked off into eight vertical divisions which are numbered by a stencil 3 to 10, to represent the months March to October inclusive. The records are best made with a warehouse crayon, as the point of such a pencil does not require sharpening and does not break off. In order to economise time and space symbols and abbreviations are used to express the various parts of a colony as well as their condition and the manipulations. These symbols should be carefully selected and should have the same meaning throughout the apiary, and it is best to confine their use to express facts—not surmises. A list of the most frequently-used abbreviations is given on one of the cards which I have arranged. There is much interest to be derived from the records on the outside of the hives. A walk through an apiary where these records are made is something more than a monotonous inspection of indifferent-looking boxes. Every hive will provide a life-history of something attempted and achieved or of opportunities neglected and lost.

The foregoing may be regarded as the minimum records in any apiary, and I quite believe that many bee-keepers will not be inclined to do more, but such records cannot be considered as a complete system satisfying all requirements. I recommend that all brood-frames should be numbered consecutively. This can be done effectively with a coloured pencil, but a neater way is to use an india-rubber stamp with adjustable figures. It is well to number the frame in several places, because after a time the frames become soiled, and it is not advisable while manipulating them to have any trouble in deciphering their numbers. On the accompanying card I give hints as to numbering the frames and in regard to other details. These details may seem tedious, but I cannot too strongly urge their importance, for accuracy and constancy of methods are the first principles of order.

A rough day-book should be used for entries at the time of manipulation. It is a convenience to record the manipulations on one side of the book only, leaving the other side for records of weather, expenses, and other general matters.

For the purpose of permanent records I suggest the use of cards suitably ruled as shown, but plain cards would do. On an average about ten cards are used for each colony. A red card contains the records relating to the queen, including a genealogical diagram; a blue card contains particulars of the hive and its parts; a yellow card relates to the stand and contains general particulars of manipulations; and there is a white card for each frame. All the cards relating to a colony are enclosed by a rubber band with the queen card at the back and the stand card in front of the pack. A white rubber band is used to indicate that the colony is all right, and a red rubber band to denote that the colony requires attention. The cards are written up from the rough day-book. If a queen or a frame is removed from a hive, or if a hive is changed, the corresponding card is removed from the pack, a note of the removal being made on the card, and the card so withdrawn is transferred to the rack relating to the colony to which the queen, hive, or frame is given. The cards relating to demised queens or to destroyed frames are

removed from the packs in service, but are kept for eventual reference, so that the pre-existing condition of a colony may be easily reproduced in the form of cards, should that be desirable, for verification of experiments or for other purposes. The packs of cards are best arranged in the numerical order of the stands. They can be conveniently consulted before entering upon a manipulation of the hives, and interest can be derived from an occasional study of the cards, affording as they do a complete view of the condition of the apiary, without opening the hives and without even going out of doors.

The system described is designed so as to enable records to be concentrated on details or to provide a general survey, and it is the outcome of many trials. I have found it very helpful in several experiments, especially in the treatment of foul brood. I do not, however, believe that every bee-keeper will adopt the system in its entirety. Those who have a fancy for routine and systematic arrangement probably will do so, but my endeavour has been so to present the system that it shall not be difficult to adapt it to particular needs, whether for purposes of research, business, or pleasure. Certainly those who follow bee-keeping as a hobby will appreciate a method which ensures a full and continuous acquaintance with every phase of the apiary.

(*Continued next week.*)

THE DAIRY SHOW.

The thirty-fifth annual exhibition of the British Dairy Farmers' Association opened on October 4 at the Agricultural Hall, and continued until the 7th inst. This year the honey exhibits were of splendid quality, and though not so numerous as could be desired, a very creditable display was made, there being ninety-five exhibits staged, against seventy-four last year. Trophies again saved the situation, five capital ones being staged, which added very considerably to the attractiveness of the honey section of the show. Had the season been a more favourable one, undoubtedly the number of exhibits would have been greater. The Dairy Show is one of the best for the disposal of honey, and as this year few bee-keepers can supply their regular customers, this probably was the cause of the small entry.

Mr. G. Hayes, Beeston, Notts, staged a very interesting exhibit of lantern-slides from micro-photographs of pollen from various flowers, which was deservedly awarded a first prize. A great deal of labour must have been expended on their preparation.

Mr. E. Walker, of Cobham, judged the exhibits, and made the following awards:

Twelve 1-*lb. Jars* (*Light*) *Extracted Honey.*—1st, H. R. Millington, Westanwick, Market Drayton; 2nd, R. H. Baynes, 51, Bridge Street, Cambridge; 3rd, J. Boyes, Queen's Head Hotel, Cardiff; 4th, W. T. Gunter, Plas Hêu, Cowbridge; r. and v.h.c., Jas. Lee and Son, Highbury, London; v.h.c., J. Pearman, Penny Long Lane, Derby; A. C. Jackson, Elveden, Thetford; H. W. Saunders, 43, Croxton Road, Thetford; Goodburn Bros., Millfield, Peterborough; h.c., T. G. Hillier, Hurstbourne Tarrant, Andover; F. Nye, Jay's Apiary, Littlehampton; and E. C. R. White, Newton Toney, Salisbury.

Twelve 1-*lb. Jars* (*Medium*) *Extracted Honey* (*other than Heather*).—1st, R. H. Baynes; 2nd, A. J. Harris, Evenlode, Moreton-in-Marsh; 3rd, E. C. R. White; 4th, F. W. Frusher, Swiss Apiary, Crowland, Peterborough; r. and v.h.c., Mrs. Seadon, Bromley, Kent; h.c., J. Pearman.

Twelve 1-*lb. Jars* (*Dark*) *Extracted Honey* (*including Heather Mixture*).—1st, E. C. R. White; r. and v.h.c., J. Pearman.

Twelve 1-*lb. Jars Granulated Honey of* 1909 *or any previous year.*—1st, Mrs. A. Turner, Broadway, Amersham; 2nd, R. Allen, Tusmore Park, Bicester; 3rd, E. Church, Masonic Temple, Cardiff; r. and v.h.c., R. Brown and Sons, Flora Apiary, Somersham; h.c., E. C. R. White.

Twelve 1-*lb. Sections of Comb Honey.*—1st, T. G. Hillier; 2nd, R. Brown and Son; 3rd, J. Pearman; v.h.c. and r., E. C. R. White; v.h.c., R. H. Baynes; h.c., Mrs. A. Turner.

Six 1-*lb. Sections of Heather Honey.*—1st, Mrs. Seadon; 2nd, J. Lamboll, Chiddingfold, Surrey.

Display of Comb and Extracted Honey.—1st, Jas. Lee and Son; 2nd, R. Brown and Son; v.h.c. and r., Mrs. A. Turner; v.h.c., Mrs. Seadon; c., R. Brown and Son.

Beeswax (*not less than* 2*lb.*), *Judged for Quality.*—1st, Jas. Pearman; 2nd, Goodburn Bros.; 3rd, Jas. Lee and Son; v.h.c. and r., H. W. Saunders; h.c., F. W. Frusher; c., Mrs. Seadon.

Beeswax (*not less than* 3 *lb.*) *in Marketable Cakes suitable for the Retail Trade.*—1st, Goodburn Bros.; 2nd, John Berry, Llanrwst, North Wales; v.h.c. and r., J. Pearman; v.h.c., E. C. R. White; h.c., Mrs. Seadon; c., F. W. Frusher.

Interesting and Instructive Exhibits of a Practical or Scientific Nature.—1st, Geo. Hayes, Mona Street, Beeston, Notts.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of September, 1910, was £2,568.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

The charmingly-situated apiary illustrated below reflects great credit upon its owner, Mr. J. Lambert, having grown within the comparatively short period of ten years from one hive to its present number of fifty stocks. Mr. Lambert kindly sent us several views of the apiary, which were each so attractive that we should have liked to reproduce them all had not our limited space prohibited this. He gives an interesting account of his bee-keeping career as follows:

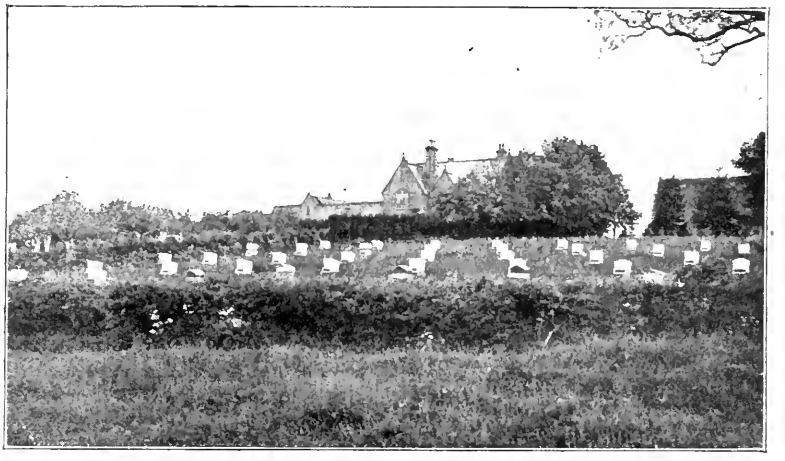
"My experience in bee-keeping now extends over a period of about ten years. I commenced in quite a humble manner with one hive, and by slow and steady steps my apiary has now grown up into a modest little group of about fifty hives. The apiary is situated on a gently-sloping bank of one of the picturesque river valleys of Yorkshire —viz., the Wharfe. This affords my band of faithful workers an open and uninterrupted flight to and from their homes. The illustration shows that the hives have the welcome shelter of an orchard on the west and banks of trees on the north. The only drawback to my location is that the number of nectar-secreting trees and flowers is not so large as one could desire. For this reason I have given my chief attention to the rearing of stocks and nuclei for sale, although this is not so profitable as honey-producing.

"When rearing queens I always endeavour to use queen-cells from swarming stocks, and also those produced by superseding stocks, as these cells always produce large and prolific queens. Moreover, when starting queen-cells I use eggs taken from a selected queen that has been laying only for a few weeks. I do not approve of queens that are reared by the dozen, kept in cages, and fed on candy, when they ought to be building up their wonderful constitutions on the best food that Nature affords. I have been fortunate hitherto in the matter of escaping all disease among my bees. This, perhaps, may be attributed in part to my continuous care and attention in taking every precaution against either contagion or infection, and in part to the fortunate fact that my district seems to be free from disease. I use naphthaline and Izal freely amongst the bees, and carbolic acid when spring-cleaning the hives.

"The would-be bee-keeper need never be deterred from embarking in this interesting occupation through fear of being stung. To illustrate my point I may quote my own case. When a beginner one sting on the finger would cause my whole arm to be swollen for days; but a few days ago I received over a dozen stings, and no trace was left in half an hour, and no discomfort was experienced beyond the momentary pain of the insertion of the sting.

"I may add that I am greatly in favour of promoting a Bill to enforce precautions against diseases among bees. This, I think, would materially help the real bee-keeper, and would induce more people to take up bee-keeping, as their chances of success would be greatly enhanced.

"I hold a third-class expert's certificate of the B.B.K.A., and shall offer myself for second and first in due course. I think all bee-keepers ought to go in for these examinations, because preparing for them shows how little one knows and how much there is yet to be learnt."



MR. JOHN LAMBERT'S APIARY, HUBY, NEAR LEEDS.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES FROM NORTH HERTS.

BEES AND DISINFECTANTS.

[7933.] Several cases have lately been chronicled in the B.B.J. of the destruction of stocks in attempts to cure foul brood with chloride of lime. All the hives experimented upon do not succumb, and it might be interesting to inquire into the reason for this difference of result.

It is an undoubted fact that "chloride of lime" possesses high germicidal powers due to the chlorine gas with which it easily parts. But this gas is fatal to all forms of life. Minute traces in the air are objectionable, and 5 per cent. is rapidly fatal to the higher forms of animal life. The rapidity with which the gas is evolved depends on temperature, moisture, and acidity. It is therefore obvious that it must be rapidly generated from bleaching powder in a strong hive with a feeder on. The carbon di-oxide present is sufficiently acid to effect decomposition of the substance, and the heat generated with the bees will increase the rapidity at which this takes place. A strong stock is rapidly exterminated, whilst a stock that has been much weakened by disease, and which is in a quiescent state, will survive because the gas is not being given off at anything approaching the same rate. I am of opinion, however, that the corrosive action of the gas on the lining of the tracheæ must prove injurious even in these cases, and that the bees suffer far more than the germs.

When dosing their hives with formalin, chlorine, or naphthaline, bee-keepers apparently ignore the fact that the stronger the hive the more quickly are the desired fumes generated. I recently saw a case of "Isle of Wight disease" where sugar syrup was being tried as a remedy. Undoubtedly they had had the genuine trouble, but when I saw them I came to the conclusion that the dose of naphthaline that was in the hive was causing considerable discomfort and was the actual cause of a large proportion of the losses. A stock that was both weak and quiet might have stood it all right, but with the temperature of the hive approaching 100deg. Fahr. the naphthaline was probably subliming much too rapidly, and many of the gorged bees were driven out of the hive to perish from cold during the night. Beyond being distasteful to them, I do not know that naphthaline has any effect on bees, although it is a cause of headache to many people. It has very little value in preventing bacterial growth, so that I do not feel justified in submitting my bees to the discomfort of its presence. If our knowledge of foul brood is all wrong it may prove a scientific remedy.

Another chemical much used by bee-keepers is naphthol beta. This was first suggested as a remedy for foul brood by Dr. Lortet. He was of opinion that foul brood was a stomach disease of the adult bees, communicable to the larvæ. When adults were fed with syrup containing foul-brood germs and naphthol beta they lived; when the naphthol beta was omitted they died. Cheshire believed that the adult bees were affected, but did not consider that the disease was conveyed from the stomachs of the adults to the larvæ. Dr. Maassen does not look upon it as a disease of the adult bees. Notwithstanding our uncertainty on the point, we dose our healthy bees with naphthol beta, and totally ignore the effect it may produce on their digestive systems. It seems only reasonable to suppose that a substance with strong anti-fermentative powers would have a modifying effect on the enzymes of the bee's stomach. At any rate, until we have definite information on the point we are not justified in using it indiscriminately on both healthy and diseased bees. If Dr. Lortet was correct and the other investigators were wrong, there still remains the fact that the best system of preventive medicine occupies itself with external conditions, and does not resort to the internal administration of drugs except in cases of dire necessity. As our knowledge progresses we shall probably find that the best preventive of disease is the maintenance of the health of the bee by means of pure food and clean dwellings.—G. W. Bullamore, Albury, Herts.

[We do not look upon foul brood as a disease of the adult bees, even though some of them may have the germs in their stomachs, and the primary object of giving them medicated syrup is that the medicament should go where it is wanted, and that is in feeding the larvæ. The small quantity of naphthol beta acts as a prophylactic and is used with this object in view. It has now been extensively employed both here and on the Continent for nearly twenty years, and many thousands of colonies have been regularly fed on such medicated syrup during that time with beneficial results. There is not the slightest evidence to show that it has had any bad effect on the enzymes of the bees' stomachs, but it sterilises the media favourable for the development of the

organised or living ferment, and thus prevents decomposition caused by the micro-organisms.—Ed.]

EUCALYPTUS HONEY.

[7934.] I have been informed by a very reliable authority that an impression prevails among some interested in bee-keeping in England that much of our New Zealand honey is gathered from eucalypti, the same as in Australia. Now this is entirely wrong. None of the eucalypti are natives of this country, and the comparatively few trees of that species growing here have been grown from seeds obtained in the first place from Australia. I think I may safely say that not an ounce of eucalyptus honey ever enters into that placed on the market either here or in England. The eucalypti here bloom in winter and very early spring, and any nectar gathered from them is used up by the bees before the honey season sets in.

Our native bush honey is entirely different from the Australian article, and would answer splendidly for manufacturing purposes did the expenses of exporting it allow of a profit. All our table honey, which comprises most of what is raised here, is gathered from clover, and clover and dandelion.—I. Hopkins, Auckland, N.Z.

TROUBLES WITH DEALERS IN BEES.

[7935.] Having experienced no slight difficulty in getting orders executed in regard to queens and driven bees especially, I think it would be an advantage to bee-keepers if some more satisfactory arrangement were understood.

Some dealers when advertising state "Cash with order," but mostly not so, and no terms are given. If they require cash with order, why leave this point blank? Yet frequently the result of an order is a demand for cash in advance, and frequently no notice whatever is taken of one's letter, and consequently considerable delay arises and loss of valuable time. Perhaps it is not to be expected that either bee-keepers or dealers should be at the mercy of one another. If cash be sent in advance, it may result in nothing but delay and the money having to be returned, involving some cost to both parties, but more to the bee-keeper. Should an attempt be made to carry out the order, it may be done in a most unsatisfactory manner, and what redress is there?

There remains the deposit system through the medium of your journal, and if all advertisers requiring "cash or deposit" were to insert the fact a great inconvenience in dealing would be overcome, it being understood that those who do not stipulate to be paid beforehand are prepared to deal on terms of cash on receipt. A stamped addressed card might be sent along with order, for reply by return post, stating whether able to comply and probable date of fulfilling the order.—An Old Bee-keeper, Brighton.

THE SEASON IN CORNWALL.

[7936.] Cornwall, like most other southern counties, has had a very bad bee-season. Stocks in the spring were very strong, and bee-keepers anticipated a record year; but the weather became unsettled until the last week in June, when we had a welcome change for a fortnight or so of lovely weather, just after the white clover began to bloom. The bees worked their hardest in the supers, as if trying to repay their owner for his outlay in the spring. We have, however, had to feed very heavily for winter. Queens have stopped laying very early this year, in some cases at the end of August. I obtained just over 1 cwt. of honey from eight stocks, four of which were this year's swarms. All the honey taken in this part was of a very fine quality, gathered mainly from clover; this made the competitions at the local shows very keen.

We have in Cornwall also a few careless bee-keepers who will not look after their bees, with the result that the stocks become diseased, and in their weak state are robbed by the healthy bees for miles around. These carry the disease home, with the result that it is almost impossible to keep bees in the district. We want the proposed Foul-Brood Bill to become law, so that we who are doing our best to further bee-keeping may be protected from the class of bee-keepers I have mentioned above.—A. F. Knight, Truro.

MICE IN HIVES.

[7937.] Thinking it might interest my fellow-readers of B.B.J., I am enclosing a mouse which was stung to death on the afternoon of September 27 by one of my stocks.

I was in the act of taking off the cover of the hive ("Conqueror" pattern) when I noticed a "gliding movement" under the top quilt, and then the whiskers of this gentleman showing under the back edge of the same. Presently he slipped down between the outer case and the brood-chamber, to make his exit at the entrance; but I quickly closed it, and after tapping the sides of the hive he made for the spot, and was quickly dispatched by the bees. You will notice the greatest number of stings on the tail and nose. Their behaviour towards myself was anything but pleasant until I reopened the entrance and raked out the mouse, when order was restored.

I had a similar experience last March

with a stock of Italians, but they were more vicious, and remained very irritable for a long time afterwards.

I notice "Beginner" (page 380) in B.B.J. of September 22 wants to know what made his bees white. If he watches them working on the flowers of hollyhock the problem will be solved. I have seen them even this week like balls of flour coming out of these flowers in my garden.

I also have observed bees working assiduously on ivy blossoms. All the stocks that I re-queened this autumn are carrying pollen from this source, which, I suppose, I may take as a sign that they are still breeding.—Jno. Rumball (Third-class Expert), Herts.

BRITISH BEE-KEEPERS' ASSOCIATION LIBRARY.

[7938.] I am still short of the total amount of cost of bookcases, and shall be grateful for further contributions towards this. Also, as the library list is now about to be arranged, will those bee-keepers who have bee-books to spare kindly send them on, so that they may be included?—W. Herrod (Secretary), 23, Bedford Street, Strand, London, W.C.

BEE-HIVE AS INCUBATOR.

[7939.] With regard to the paragraph about a "Bee-hive as Incubator" (page 400) in your issue of October 6, Mr. Crawshaw says it would take the hive six months to hatch as many eggs as eight hens; but I must remind him that I am not responsible for the experiments of Mr. Decker, but only for the translation of the paragraph. The only way I can see that the bee-hive is of more use than eight hens is because Mr. Decker must have wanted "spring chickens" during the first six months of the year, while the next three months must be used to gather the hundredweight of honey.—H. Siebel, Cheshire.

Echoes from the Hives.

It might interest your readers to hear that I took 110 lb. of good honey from one hive, extracted from shallow frames. I have never had so much from one stock before in all my thirty years of bee-keeping, and yet the season has been a wet one and generally rather cold.—W. H. Walker, St. Asaph.

AUGUST RAINFALL.

Total fall, 5.08in.
Above average, 2.07in.
Heaviest fall in 24 hours, 1.16in. on 23rd.
Rain fell on 24 days.
Total fall since January 1, 26.05 in.

W. Head, Brilley, Herefordshire.

WEATHER REPORTS.

Westbourne, Sussex.
August, 1910.

Rainfall, 3·54 in.
Above average, ·97 in.
Heaviest fall, ·85 in. on 5th.
Rain fell on 20 days.
Sunshine, 168·7 hours.
Below average, 51·2 hours.
Brightest day, 10th, 13·5 hours.
Sunless days, 1.
Maximum temperature, 70° on 7th.
Minimum temperature, 44° on 23rd.
Minimum on grass, 41° on 23rd.
Frosty nights, 0.
Mean maximum, 65·3.
Mean minimum, 52·9.
Mean temperature, 59·1.
Below average, 1·8.
Maximum barometer, 30·264 on 31st.
Minimum barometer, 29·569 on 29th.

L. B. Birkett.

Barnwood, Gloucester.
August, 1910.

Rainfall, 5·73 in.
Above average, 3·53in.
Heaviest fall, 1·81 in. on 28th.
Rain fell on 23 days.
Total to date, 20·79in., as compared with 15·05in. for the corresponding period of last year.
Mean maximum temperature, 67·2; 2·8 degrees below average.
Mean minimum temperature, 54·6; ·6 of a degree above average.
Warmest day, 11th, 75.
Coldest night, 22nd, 46.
Relative humidity, or percentage of moisture in the air, 83 per cent.
Number of days with sky completely overcast at 9 a.m., 15; do. cloudless, 0.
Percentage of wind force, 36.
Prevailing direction, S.W.

F. H. Fowler (F.R.Met.Soc.).

Queries and Replies.

[4051.] *Queen Introduction — Best Foundation for Sections.*—1. I shall be much obliged if you will name the breed of the bees enclosed. I recently introduced a new queen into my hive, and as I can only manipulate my bees at the week-end, and I did not know exactly when the new queen would arrive, I proposed to capture the old queen and put her on a comb (a 1-lb. section) on the top of the brood-chamber, but separated by excluder-zinc, the comb being protected by a box. The bees could thus get at the queen, but the queen could not get below, and it would be an easy matter for anyone to remove it when the new one came. I was told, however, that this method would not work, so I did not try it, the danger being that the bees might raise a fertile worker in the brood-chamber. I should be glad of any information on this point. 2. I read that

the walls of the hexagonal cells of bees are "about one four-hundredth of an inch in thickness, the plates of the pyramidal basis being about twice as thick." In this case, from what I know of the mathematical accuracy of bees, I should think that they would not allow the brood-foundation which we put into the hives to remain at its original thickness, but would gnaw away the surplus wax and use it for the walls. If this is so, would it not be economical to use the thickest possible foundation for 1-lb. sections instead of the very thin foundation which is usually used? Or, if the energy used in removing the surplus wax is greater than would be necessary for making fresh wax, to use fairly thin foundation for the brood-chamber? Thanking you in anticipation.—NOVICE, Eccles.

REPLY.—1. Your proposed plan is a rather risky one, but at the end of the season it might work all right, if the queen were not kept in the section too long. The bees are ordinary British natives. 2. Bees would not thin down the midrib as you suggest, but build on to it, thus leaving a thickness which would be disagreeable in eating the section honey.

Bee-Shows to Come.

October 20 and 21, at Kilmarnock.—Honey Show in connection with the Ayrshire Agricultural Society's Show. **Entries closed.**

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

*** Mr. S. J. Jones, Wem, Salop, asks us to announce that, owing to the death of his little daughter, he has been unable to despatch bees or attend to the large amount of correspondence which he has been daily receiving in reply to his advertisement. He hopes to reply to all customers and inquirers within the next few days.

A. W. B. (Gloucester).—*Lucerne for Bees.*—Lucerne is not of much use in this country, and we question if it is grown to any great extent in Eastern Australia.

BEGINNER (Eccles).—*Using Surplus Syrup.*—If it has been well boiled, and you cork it in an airtight receptacle, it will keep until spring, when you can dilute it with water and use it for the bees.

RAILWAY-MAN (Pitsea). — *Preparing Colonies for Winter.*—1. Your colonies need not necessarily be queenless because they have no brood now. You can examine the frames and search for the queens, but at this time of the year they are much smaller, and are easily overlooked. 2. If your colonies are strong they should take all the syrup in a few days if it is given to them warm. Feeding should have been completed by this time. 3. You need not take away the unsealed stores, but place the combs containing them in the centre, and the bees will use the syrup from the unsealed cells first. Of course, if there are whole combs unsealed they would be better removed. 4. Pack colonies for winter now.

GWALIA (Bangor).—*Granulated Honey.*—1. We do not understand what sort of "thick soft surface" you got after melting your granulated honey, unless it was a mixture of wax and scum, which would be of no use as food for bees. The liquid portion can be given from a feeding-bottle, or in an inverted jar covered with muslin as you propose. 2. The granulated honey has evidently fermented if it has a sour smell, and should not be given to the bees. It is only fit for making into vinegar. 3. Black bees. 4. Some use traps to get rid of drones towards the end of the season, but if left to the bees they generally know when to drive them from the hive.

T. E. S. (Malvern).—*Late Fertilisation of Queen.*—1. Although under exceptional conditions queens may be fertilised after the middle of September, no dependence can be placed upon it. 2. You can only be sure if you find her returning with the usual marks of fertilisation; otherwise you can only tell that she has been fertilised after she has commenced to lay. 3. An old fertilised queen would be preferable.

J. B. (Mill Hill).—*Robbing Colonies.*—The bees you send have been dead too long to be of much use for examination, as most of them are dry and mouldy, but have the appearance of having been fighting. This was probably caused by robbers invading the hive and your not taking sufficient precautions in feeding. From your description it is evident that the colonies have been dwindling through fighting and your not stopping it in time. The two handfuls left are hardly worth uniting, as in any case they could hardly live through the winter.

L. E. A. (East Malling).—*Bees and Fruit; Sugar for Bee-food, &c.*—1. It is immaterial, so long as the sugar is refined cane. 2. Yes, most certainly you should disinfect all the combs. Place an empty super on the floor, and inside it put a small earthenware dish con-

taining 4 oz. of a 10 per cent. solution of formaldehyde and a piece of common washing soda the size of a filbert-nut. Stack the supers containing combs on the top of the empty one, covering the uppermost super with a calico quilt. The fumes will rise and permeate through all the supers, thus thoroughly disinfecting them. If an air-tight cupboard can be used so much the better. 3. Not unless there is a scarcity of flowers, when they will go to soft fruits which have been damaged first by birds or wasps. 4. The honey appears to have been burnt, the flavour being quite spoilt.

NOVICE (Selby).—*Queen Cast Out.*—It is a queen, and from what you mention we should say that the colony was not queenless. There has evidently been a fight between the rival queens, the weaker one being overcome and killed.

Honey Samples.

E. C. (Cockfield).—The honey is gathered principally from charlock, which granulates very quickly. There is nothing wrong with it, but it is difficult to sell sections which are granulated.

J. L. (Keighley).—It is rather thin for heather-honey, and tastes as if fermentation had started. Probably it was removed from the hive before being sealed over.

M. H. (Northop).—There is not the slightest trace of honey-dew in sample. The honey is principally from clover with a slight admixture from ragwort.

U. (Harrow).—The honey is granulated, but we should say it would do to show in a light class.

E. B. B.—There is very little honey about it. The bees have evidently had access to a jam or sugar-boiler's factory.

J. F. F. (Muswell Hill).—Of the three samples, Nos. 1 and 2 are best in colour, No. 3 being decidedly dark, though it contains no honey-dew. All three are flavoured strongly with limes. No. 3 is best in consistency, Nos. 1 and 2 being rather thin.

F. A. B. (Snaith).—A good sample of heather honey, which is very scarce this season. You should get from 1s. 6d. to 2s. per lb. retail for it.

R. H. (Bodmin).—1 and 2. Honey is of good quality, and quite fit for show purposes. 3. Quite fit for class named, but whether it will take a prize or not depends on what is staged in competition with it. 4. Honey for show purposes is extracted in the ordinary way by means of an extractor. You should purchase one, as they are to be had cheap now, and can often be obtained secondhand through our advertisement columns. If you have no extractor, break up the combs and strain; but this is a very wasteful method.

Suspected Disease.

FRIARS (Bangor). — Bees appear to have been starved, as their stomachs are empty, and this may be the cause of their coming out on the ground in such numbers. You could tell the difference in brood of fertile worker from that of a fertile queen, and if the brood is compact and the cappings of cells not raised, it is presumably ordinary worker-brood. You can only ascertain if your hive is queenless by searching for the queen. As your colony has been so greatly reduced in numbers the only satisfactory plan would be to unite another lot with it, as the probabilities are that it would entirely succumb during the winter.

BEES (Meldreth), X. Y. X., and E. T. S. (Surbiton).—Bees are affected with "Isle of Wight disease," and should be destroyed at once, all combs, &c., burnt, and hives well disinfected.

J. G. (Penryn).—It is not foul, but chilled, brood.

F. W. W. (Worcester).—1. Comb is affected with foul brood. 2. You cannot do better than use "Apicure" in the hive.

M. E. P. (Alton).—It is "Isle of Wight disease." Sorry we cannot tell you of a cure, but no remedy has yet been discovered.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

THE CONVERSAZIONE.

(*Continued from page* 406.)

The Chairman (Mr. Cowan) said the method of keeping records by cards had come into vogue for every purpose, and this was a method that Mr. Garcke had worked out very thoroughly. They had had a very excellent paper, and he invited discussion and the opinions of some of those present on the system proposed.

Mr. W. F. Reid said he could not help feeling, after hearing the very able paper on the subject, that he had been doing the work in the crudest manner possible all his life. He simply put a card in his hive, and noted down on it everything relating to the hive, and he admitted that when tacked on to the flap there was a little difficulty and confusion. He had intended to enter all these particulars in a book, but had not the leisure, and thought they should be grateful that Mr. Garcke had not only worked out a very good system of keeping records, but had also given the form on printed cards. He was not competent to criticise the methods of one who was essentially a master of organisation, if he might say so, and as Mr. Garcke had devoted his experience to their service in working out this excellent method, he would much rather hear the opinion of someone who kept a large apiary. Personally, he intended to adopt the system proposed as soon as he was able to obtain the cards. He thought the suggestion of giving a title to the queen was a good one, for they all felt an affection for their queens, and when he had a good queen he was always sorry to see the last of her. They were very grateful to Mr. Garcke for working out this system and spending so much time in placing it before them in such a clear manner.

Mr. R. T. Andrews said the system that their friend Mr. Garcke had brought before them was a very excellent one, but to his mind it was too excellent. There were very few bee-keepers who could either afford the time or learn the whole of this system so as to be able to use it in their apiaries. Certainly those who had two, three, or even half a dozen hives would not want anything of the kind, as they could carry all they wanted to know in their minds. He certainly could not find fault with Mr. Garcke's system, and with it any bee-keeper working on a large scale could make records of his observations, and find out all that he wanted to know respecting his hives in a few minutes. There was one thing he would like to alter on the card of directions. Mr. Garcke gave certain letters as abbreviations, and those relating to the queen were all right; but when they came to those relating to bees he could not see how it was that he put O.K. to mean "all right." It was the only thing in the card that did not convey its meaning to his mind. He would suggest that O.K. be altered to A.R.

Mr. G. Rogers said he would like to point out to the previous speaker that if he bought a certain kind of sauce he would find a full definition of O.K. In reference to the most excellent paper, he must give Mr. Garcke supreme credit, but at the same time, as a practical bee-keeper of many years' standing, he was afraid it could be put into practice by very few. He knew two or three hundred bee-keepers, many of whom had neither the ability nor the time to adopt it. His own experience was that bee-keepers, instead of going in for elaborate systems, would be far better employed in keeping their apiaries in better order. Unfortunately, the majority of hives in his own county (Cambridgeshire) were not clean, much less kept by records.

Mr. E. D. Till thought it hardly fair to depreciate the system that Mr. Garcke had sketched out. He was kind enough to send him (Mr. Till) a packet of cards, which, although he had not yet had time to study them carefully, he thought were a step in the right direction. He commended Mr. Garcke, for they must go forward. People were saying that bee-keeping was being brought to a fine art, but now they were bringing it to a finer art, and there were many who would use these records, take more interest in their queens, and see the effects of in- and cross-breeding, but without such records it would be impossible to speak with authority. Although it was true that the majority of bee-keepers would not keep these records, nevertheless it was a very important matter that they should be kept.

Mr. Lamb said he also received from Mr. Garcke a copy of his paper and a pack of cards, and could assure him that he had read his scheme through two or three times most carefully and considered it well. Mr. Garcke appears to appreciate the fact that not all bee-keepers are going to carry out the scheme in its entirety, and he clearly shows that the part which he expects those who are not scientific bee-keepers to discard is the use of the white cards, dealing with frames. Therefore we have left blue cards, pink cards, and yellow cards. Now he (Mr. Lamb) ventured to make a suggestion—namely, that they should dispense with the stand card (the yellow one), for he really could not find any strong reason for keeping a special card for

the stand, and to do away with this will save a great deal of work. Mr. Garcke will probably say it is indispensable, and he should be glad to hear his arguments; but he thought any bee-keeper, even if he keeps a hundred stocks, could say approximately where any particular hive was standing. This being so, he could not see why there should be a stand card. There were two left—the hive card and the queen card, both of which were excellent. A suggestion he ventured to make in regard to the hive card (No. 2) was that, as the average bee-keeper will not keep a record of every comb in his colonies, instead of having as a heading "Frame Numbers, &c.," two or three columns should be provided for the number of combs covered with bees at the time of examination, the number containing eggs and brood, &c. He personally had found such information to be very useful; thus if one examined one's hives about the middle of March and made a note of all these particulars, one could see how the stocks progressed in April and May. With regard to what he had done himself, he simply used a penny copybook, in which he devoted one page to each hive, and recorded all the important facts thereon. These were noted on waste cards, which were hung up in the shed of his apiary. When he did any special manipulations, he entered the facts on the cards; then he took them home from time to time and recorded the facts under each hive. In his spare time he made a point of analysing these facts, typewriting out anything special that occurred; then, finally, entered them into a record-book. He need hardly say that he highly approved of Mr. Garcke's scheme for those bee-keepers who were able to make use of it.

General Sir Stanley Edwardes said he thought it would perhaps interest them if he gave his experience, very similar to that of Mr. Lamb and most bee-keepers. He usually used ordinary date-cards —January, February, March, and so on—and on the back of these he wrote particulars of the queen of every hive. On No. 1, generally in April, he wrote the state of the hive and what he found in the way of brood or stores. Then he had a little book in which he noted anything wanting for No. 1. No. 2 was next examined, and anything deficient or worth noting was put down. If everything was right, no mention was made in the book; in fact, it was O.K. Of course, it was necessary to have the cards in the hives. He remembered, and thought Mr. Herrod would too, when they went through several of his hives at Farningham, and found that one or two of them required certain things to be done, but which had not been noted on the card or in a book as he did it now. Consequently when Mr. Herrod had closed the hives up he asked, "Which hive did you say wanted so-and-so?" And on looking round neither could tell, so they had to do the work over again. Keeping records was a very valuable addition to scientific bee-keeping, and, as Mr. Garcke had pointed out, much more minute records should be kept by those who went in for the higher walks of bee-keeping. Cards inside the hives and the book outside for anything that was required he had found most convenient.

Captain F. Sitwell said that in reading the B.B.J. one usually found objections raised to a great many things that were proposed from the point of view of economy, and he thanked Mr. Garcke for introducing this subject, because personally he was one of those lucky ones who had plenty of leisure, and he intended to try to follow his instructions minutely. Other people, however, were not always blessed with such time, and they would say, "It does very well, but I do not want a calendar for every hive." He used broken sections. There were plenty of them in any apiary, and as a point of economy they were useful; a note of what was required could be made on them, and corrected in the rough.

Mr. O. R. Frankenstein said when he received the cards from Mr. Garcke he came to the conclusion that the amount of care and thought given to this matter was well suited to the experimentalist and scientific keeper of bees; but coming into touch with bee-keepers, as he did, who kept bees not as a hobby but for commercial purposes, in every instance he found that these men had only a minimum amount of time at their disposal. He therefore came to the conclusion that such a perfect method of recording seemed too complicated to meet with the approval of the majority of bee-keepers. He had listened to what Mr. Lamb and Sir Stanley Edwardes had to say, and their methods were much more simple and, to his mind, quite adequate. Without going to the trouble of spending any time on cards and rulings and paintings and figurings, he got a little piece of cardboard, a couple of tacks, and three sheets of notepaper about 6 in. by 8 in., ruled, and put that inside each hive. He put at the top "No. —," as he merely had a number for the stock. If he interfered with that stock the card containing all references to it went with the stock. If he put it into a fresh hive he merely scratched out the old number and put a new one, the number having no reference to the position that it occupied. All he wanted was to find out how each colony was progressing, and made a note of it after each examination. Few abbreviations were necessary. At the be-

ginning of the season he would go to his stock and examine, say, card No. 3. On it there would be the date—1909 or 1910. That referred to the year when the queen was born, and after that he would put down whether a good or bad layer, or anything else with reference to the queen. He had also made a note if there were plenty of eggs, whether the queen bred rapidly, or was healthy or otherwise. This took about half a minute, and that was a sufficient record for all apiaries, without any cost and took very little time.

Mr. G. H. Sander said he numbered each stock simply for its identification. Each stock had a fresh card every year, on which he put the number of stock, the year in the left-hand corner, date of birth of queen. At the side there was a column for date of observations, number of frames with brood, supers when put on and taken off. When he got indoors he put it all down a little neater on cards. This seemed to him very simple, and it gave a permanent and orderly record of what was done.

Mr. A. E. Paul adopted very much the same system, only instead of numbers he used letters, and found that quite sufficient. He had suffered very much from the American card system as a business man. It did not work out practically unless you kept a special clerk to look after it, and he had not the time or the means to adopt that.

Mr. T. W. Cowan, in closing the discussion, said that many years ago he kept a large number of hives, and found it was necessary to keep some sort of record of his observations. He was then working with the object of finding out what he could in regard to the science of bee-keeping. The result was that he brought out a "Notebook" for the assistance of bee-keepers to keep records. That, of course, was very different from the card records that Mr. Garcke proposed. Since he had kept fewer colonies he had been content to have a card for each hive, and as he did not manipulate his hives very frequently he had found this sufficient for his purpose. He usually examined his hives twice a year, unless he found anything was going wrong, but otherwise he only looked them through in the spring and autumn. In the spring he changed the hive, and put down on the card whatever he saw peculiar about it; and if there was no brood this was entered on the card. He did the same thing in the autumn, and when he had done looking over his hives, and had put all the frames into clean ones, he made a note of anything he wanted to observe. The hives were then not touched until the following spring, and when they were examined he had a copy of the previous records to look up and to correct, and if necessary he made a fresh card. In that way he had been able to keep sufficient records for his requirements. Of course, with a few hives this was simple enough, but when one had a large number, and wished to keep a correct record of all that was done, a better system than that would be needed. The card system had been recently introduced, so that it had now come into use in every industry, and likewise for scientific purposes, and it was quite a usual thing to keep records on cards. He thought people were getting into the way of using these cards, so that it would not appear so intricate as it would have done years ago. He was sure Mr. Garcke did not mean this method to be compulsory or to be adopted in its entirety. Every bee-keeper would have to adapt that part of the system that would suit him best. If he could manage with three cards, he was quite at liberty to do so. He (Mr. Cowan) would be quite satisfied to keep the records on three cards, and he entirely approved of the system. Their friend Mr. Andrews had evidently not travelled in America, or he would soon have learned the meaning of O.K. If you asked what it meant they would say it was "Orl Korrect," and was now so well known as an abbreviation that it would not be far wrong in this case to adopt it. Mention had been made about the stand having a number or lettering. He began by having letters, but when he got more than fifty hives he found that the alphabet was not long enough without doubling the letters, and he had to resort to numbers. He quite agreed that to number the stands was much more convenient, and if he adopted the system he would certainly number the stands, because his own were fixed. There was an obvious advantage in having stands as a basis for numbering, owing to their fixed position. Then the card of directions was admirable, and the abbreviations most convenient. If those who were scientific were to adopt that system he thought that we should get a good deal of very useful information. He quite understood that those who were going in for commercial bee-keeping might not adopt so elaborate a method. He wanted to get information about temperatures some years ago, as that had a bearing on honey-production, and that was one of his objects in getting out his "Notebook." On the Continent they have a number of stations where records are kept of all observations, and it would be very useful to get a certain number of bee-keepers in this country to record their observations in the same way, because we should be able to judge as to the best localities for keeping bees and the best conditions for producing honey. They must thank Mr. Garcke for the very

able paper he had brought before them, which he thought would be too much for them to master at that meeting, and they would do well to study it when it appeared in the BEE JOURNAL. He would now ask Mr. Garcke to reply to the criticisms.

(*Continued next week.*)

REVIEW.

The A B C and X Y Z of Bee-Culture. By A. I. Root and E. R. Root (Medina, Ohio, U.S.A.: The A. I. Root Co.; and London: The BRITISH BEE JOURNAL, 23, Bedford Street, Strand. Price 7s.).—It is not three years since we reviewed this work, and now a new edition has made its appearance. One would suppose that when a book comes out so frequently as this one has done there would be little new to be found in its pages, but in looking it through we were agreeably surprised to find how many alterations and additions have been made. There are a number of what might be called moving pictures scattered through the work, showing the successive steps of various manipulations described, which would be particularly useful to beginners. Much information has been added, some of the articles have been entirely re-written, and the subject of "Bees as Pollenators" has received special attention. Technical articles have been written by specialists, and a list of the authors is also included. As an appendix to the work there is an article on the "Anatomy of the Bee" by R. E. Snodgrass, whose work on the same subject we recently reviewed. The present volume is a regular cyclopædia of everything pertaining to bees and bee-keeping, and in reading it we are impressed with the idea of its completeness. The revision has been ably carried out by Mr. E. R. Root, the editor of *Gleanings*, and the book, which has been enlarged to 576 pages, is one which we can thoroughly recommend.

AMONG THE BEES.

A GOOD START.

By D. M. Macdonald, Banff.

In any work or enterprise we may undertake a good start means a great advance at the most critical time. For a newly-hived swarm it means an immense advantage not only at the beginning of the race, but right through. A breakdown of the foundation is a severe handicap; if timely reparation does not take place it means a great deal more. If bees are left merely to exist during a spell of inclement weather after hiving it means that the colony will have to contend against the evil effects for weeks, if not for months. If the building of combs drags out for as many weeks as a good swarm can, in the most favourable circumstances, construct them in days, it means that the brood area is likely to be not more than half-filled with perfect worker-comb. If the bees are too few to put together the fabric in a reasonable time it means scamped work, with a baneful effect pursuing the colony during its existence. If the queen is not stoked fully from the first day of the swarm's existence as an independent colony the stock will dwindle.

Take, for example, two suppositionary cases. A swarm is hived on the orthodox number of frames, independent of the size of the cluster. After a brave attempt to work out the impossible, some instinct informs the builders that drone-comb is far more easily constructed; that it costs less labour, less time, and less material; and they start transition cells, working gradually into the larger form. That colony cannot prove a paying asset either in the current season or for all future time. Another lot is strong, but because the flow is a feeble one, the weather unsettled, or from faulty foundation, sheets badly fixed or from having stretched or sagged somehow, only about 75 per cent. of the cells in the hive are available for rearing workers in. The start here is most inauspicious, and all through its existence that stock suffers injuriously from the faulty beginning. If bees are to succeed their owner must see to it that they are given a good start in life's battle.

While on this subject I may warn bee-keepers against another fault they should avoid. I had quite a number of second-hand frames lying about, and foolishly used them this season to hive swarms. Unfortunately they had warped and twisted a bit, and the result is an object-lesson which I shall never forget as long as I live. Instead of a perfect brood-body I find a number of combs thick in one part, thin in another, brace-combs are too prominent, and side combs are considerably fixed to dummy boards or to the sides of the hives. Looked at from above, they show frames hanging one way and combs hanging the other. The greatest care must be taken in withdrawing frames, and many of them will be found *not* interchangeable. I have almost vowed never again to use frames or combs a second time when they are once out of the hive.

Border Enthusiasm.—The progress of the Cumberland branch of the B.B.K.A. is an object-lesson in what grit and perseverance can do in inaugurating, extending, and maintaining a powerful association of bee-keepers. Established at a meeting where only *seven* enthusiastic apiarists met to bless its inauguration, it

has grown and extended until its ramifications penetrate to the most outlying parts of the county. The seven members have increased into as many hundreds, making it now one of the largest in England, whether judged by actual numbers or by percentage of the population. The enthusiasm of the members, individually and collectively, would be very hard to beat, and the beauty of the heartiness is that it is partaken in by all ranks and conditions of men and women in the county. Lords and ladies, the Speaker, titled landowners, clergymen, doctors, and working-men take a pride in the success of the organisation. The County Council gives tangible proofs of its appreciation of the industry, and hopes are entertained that these will be increased in the near future. A secretary ready to spend and be spent in the effort to attain perfection, backed by a strenuous working committee, and aided by experts who labour like bees, there is here a pleasant combination, pulling hard at the oars in happy unison, all eager to help in attaining the goal of success.

Two years ago they held their first county show of honey and bee-products at Carlisle, which was attended with a very fair measure of success. This year they more than doubled the number of their exhibits, and the quality was all over all that could be desired. Quick to learn a lesson from the exhibits in the open classes last year, county members staged their entries in a commendably tasteful manner. In every way the show was one of which all might well be proud. Not content with the measure of success already attained, the association is planning out new schemes for still further improvements. A point worth emphasising is that a working miner secured the silver cup presented by Canon Rawnsley for the best-kept apiary in the county. (An illustration of this apiary will shortly appear in the B.B.J.) Cumberland is all over an excellent bee-county, most parts of it being fortunate in having a variety of honey-sources. While white clover is the staple source, heather and bell-heather cover considerable portions of the surface. Lime and sycamore trees are common. Fruit-bloom is abundant, and many field crops lend themselves to the claims of the bee, while innumerable wild flowers supply nectar.

HEATHER-SECRETION.

1909 AND 1910.

By "Medicus," Newcastle-on-Tyne.

The following notes on observations made at the moors on the flow of heather-nectar during the past season may prove of interest to some of your readers, especially when compared with the conclusions the writer came to last year on the same subject (B.B.J., November 25, 1909, p. 463).

Mr. J. N. Kidd kindly made the observations during the first half of both seasons. This season the heather-flow began earlier than most bee-keepers in the North of England expected, and unfortunately we were unable to take any records prior to August 13. This was particularly regrettable, as the only heavy flow of this season was during the first week (August 7-14). August 14, the first day of our weighing and the last day of the flow, showed a gain of $8\frac{3}{4}$ lb. of nectar, the highest recorded during the season. We think that at a modest estimate our hive would have shown a gain of 15 lb. of cured honey up to that time. An allowance for this has not been made on the chart. As recorded, the total for the two years is almost identical, whereas there was a difference of about 15 lb., as explained above.

The chart shows well how different are the dates of the honey-flow in different seasons. In 1909, by August 25 the total gain was $\frac{1}{2}$ lb., while on the same date in 1910 the gain was over 2 st. (allowing for the period not recorded). In 1909 the greater part of the honey was gathered on four big days; in 1910 the total was almost entirely made up of small but continued gains. In 1910 there were seven days showing either no gain or a loss out of the thirty days of observation, compared with fifteen, or half, the days last year.

In 1909 there were long periods with no income, the total gain in weight during the first ten days being 1 lb.! whereas this year there is a welcome contrast in that respect. As a consequence bees have returned in much better condition from the moors, as breeding has gone on more or less continuously. In 1909 the majority of hives returned broodless, and there was a consequent heavy winter mortality. The following weekly figures illustrate this difference in the two seasons:

	1909	1910
Aug. 8-13.....	—	+15
Aug. 14-20.....	— 2	+12½
Aug. 21-27.....	+ 9½	+ 4½
Aug. 28-Sept. 3	+18½	+ 7
Sept. 4-10.....	— ½	+ 7

In neither year during the time of observation has there been what would be considered an ideal bee-day—cloudless, mild, and windless—so that unfortunately we have no proof to offer of what a good average colony could do under such conditions. The record for the two seasons was one of 10 lb., made on September 2, 1909. The day began with a very heavy hoar frost, the minimum shade temperature being 34 deg. Fahr. The wind was

due north and very cold, so that in spite of a cloudless sky until 2 p.m. it was too cold to sit in the open air unless sheltered from the wind. The bees began gathering at 8 a.m., with a shade temperature of 48 deg. Fahr., a very heavy flow continuing until 10 a.m., when the temperature had only reached 52 deg. Fahr. After this the nectar intake very rapidly slowed down, though carried on until 3 p.m. On August 14, 1910—the best day this year—the scales showed a gain of $8\frac{3}{4}$ lb. The temperature was 72 deg. Fahr., and the wind from the south-west, but the day was distinctly dull and hazy. The flow was uninterrupted from 7 a.m. to 6 p.m. Though the results are very similar, the conditions of the days and the flows are in striking contrast.

It is well to remember that the gain in weight does not represent the total nectar intake. During a rapid flow the evaporation-loss in weight is much increased both day and night. When bees are inactive the day loss and night loss vary from $\frac{1}{2}$ lb. to $\frac{3}{4}$ lb.; but though the scales at 1 p.m. on August 25, as rain came on, showed a gain of $6\frac{3}{4}$ lb., and some bees were still flying, yet by evening we were only able to record a $5\frac{1}{2}$-lb. gain. Similar results, though not so marked, were noticed on several occasions. After a good day the night loss is also considerably increased, as witness the loss of $2\frac{3}{4}$ lb. on the night following a gain of $8\frac{3}{4}$ lb. on August 14.

It was noted in both years that the number of bees flying, and their activity on the heather, were no criteria of the extent of the flow. Some apparently good days were proved by the scales of little account. The degree of distension of the abdomens of the returning bees, and the distance they fell short of the alighting-boards, proved, however, valuable guides.

This could be very prettily seen in the case of the hives more particularly under observation. These hives were situated in a little valley and faced north. They were sheltered behind by a 3-ft. wall. Beyond this there was the ascending and well-sheltered valley, up which the greater number of the bees worked. By standing just below the hives we were able to see the returning "little people" against the sky-line. When the flow was good we saw them come slowly sailing down the valley, with pendent abdomens at right angles to the thorax. In their distended state the swing round to the hive-entrance proved too much for a large number of them, and down they dropped, often 3 yds. or 4 yds. from their goal, there to regain breath before the final winging to the alighting-board, up which they dragged their heavy burdens.

Weather.—August started well, but the latter half proved windy, cold, and wet. September, during the first fortnight, was dry but cold, with a minimum of sun and an almost continuous north-east wind. The maximum shade temperature in the part of September that the bees were at the moors was 62 deg. Fahr., but more generally a daily maximum of only about 55 deg. Fahr. was reached. The north-east wind caused heavy dews from off the sea, and with so little sun the heather seldom dried until well into the day. The overcast conditions of the sky prevented any heavy night-frosts and consequent early damage to the heather bloom.

Secretion.—In 1909 we noted that, contrary to our expectation, heavy flows only lasted for two or three hours early in a day, after which time, even when the day remained fine, the bees returned with partial loads. I thought that this was due to the prevailing north-westerly winds and low temperature, and I suggested either that the heather under such conditions secreted only at night and in the early morning, and consequently was soon emptied by the bees, or that the secretion from the same reason was so slowly produced that the atmospheric evaporation caused it to be dried up as quickly as it was formed. The latter view is rather borne out by this year's experience. The weather was similarly cold and the wind from the north, but north-east instead of north-west. During the whole period the atmosphere was humid and evaporation was very slow—what the meteorological experts in the daily papers described as "cool and close weather." The nectar-secretion, such as it was, was equally good the whole of each day on which it was present. We have found in both seasons that bees began to work on the heather when the temperature reached 50 deg. Fahr., often when it was as low as 48 deg. Fahr. if the wind was light, and that they would come home as heavily laden under these conditions as when the temperature was higher. On such days, however, a smaller proportion of the bees were able to be absent from the hive at a time, and many of these, if they once stopped to rest on the homeward journey, became chilled, and never returned.

Ling (*Calluna vulgaris*), we may take it, is much more certain in its secretion than most of our honey plants, and secretes at a very low temperature, though the quantity may be small. When the temperature is low and the wind in the north it is necessary, so as to have a sustained flow, that evaporation, either

by wind or atmospheric dryness, should be at a minimum. Under the more genial conditions of a high temperature and a southerly or westerly type of wind the

Clouds are another factor which much affects the day's work. Bees often work quite well and steadily when the sky is universally overcast, and even under

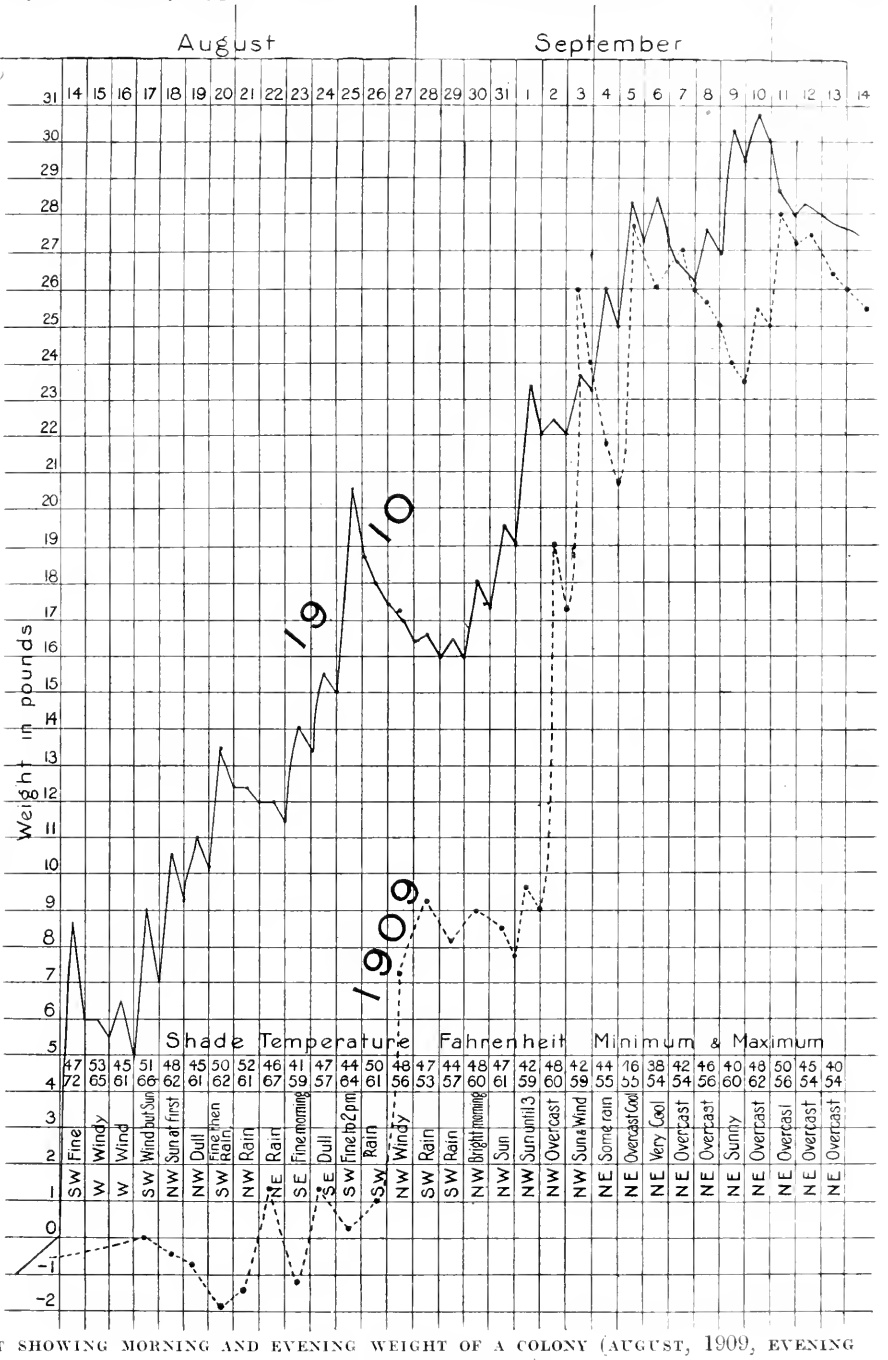


CHART SHOWING MORNING AND EVENING WEIGHT OF A COLONY (AUGUST, 1909, EVENING WEIGHT ONLY RECORDED).

nectar-secretion becomes sufficiently free to make the question of evaporation of little import.

these conditions continue to do so through a light rain. But if the day is bright and there is intermittent sunshine, every

time a dark cloud crosses the sun all the flying bees hurry helter-skelter home, and the result is much broken time, with a consequent disappointing return for the day.

Our observations thus far have been made in bad seasons, when the bees have only been able to work under adverse conditions. The highest temperature the writer has been able to record in the two seasons has been 63 deg. Fahr.! We hope that the wonderful summers of memory may yet be repeated, and that we shall be permitted to pry into the secrets of such a time.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A MURMUR FROM KENT.

[7940.] Would you kindly allow me space in your columns to criticise the bee-work (if we might justly name it so) which is being carried on by the Kent County Council? I have during this past season attended lectures given in various places in the county by their instructor, and have had to come to the conclusion that they are poorly attended, chiefly owing, I think, to lack of interest.

The annual show at Tunbridge Wells on September 28 last was a disgrace to the county considering the money which had been expended. There were only about twenty-five exhibits in all the six classes. These were badly staged and unattractive, being stacked on a plain trestle table covered with green baize. A loose class-ticket was simply laid on the exhibit, thus leaving ample room for dishonest exchanges or unintentional muddle. Each class required either six sections, twelve jars, two shallow frames, or not less than 1 lb. of wax. Now, how many cottagers (for it is the sole idea of the K.C.C. to benefit the cottagers) are there who get this quantity of show honey, to say nothing of the cost of transit? Is it right for the instructor to unpack and stage, then judge? I think this would not be allowed at any of the B.B.K.A. shows. The whole affair seems to be mismanaged.

Surely it is time someone in authority approached the County Council and pointed out the sheer waste of money, for the work must cost at least £300 a year in salaries and expenses. Would it not be better for them to hand that money to a committee of practical men (I emphasise the word "practical") selected from existing Kentish associations affiliated to the B.B.K.A., and make them responsible for the selection of an active secretary and a young, energetic, and practical expert, not necessarily drawn from one of our colleges, but one who has shown himself capable both on the show-bench and in obtaining his certificates?

I am sure if this were done Kent county—"The Garden of England"—would begin to shine in the bee-world, as it does in gardening and fruit-growing. For goodness' sake, wake up, Kent! It is never too late to mend.—NIL DESPERANDUM.

[Unfortunately there is no Kent B.K.A. at the present time, and the only one affiliated to the British is the Crayford B.K.A. There are a number of bee-keepers in the county, and it is a pity that they do not form a county B.K.A., which could have some influence with the County Council and get these things remedied. It is certainly not right for an instructor to stage the exhibits and judge them, and it is not surprising that under such conditions there were so few exhibits. If a few of the leading bee-keepers in the county were to lay the matter before the County Council no doubt they would attend to it, for from what we know of them they are usually anxious that their money-grants should be spent advantageously.—ED.]

TROUBLES WITH DEALERS IN BEES.

[7941.] With regard to letter No. 7935 in B.B.J. last week, may I, also an "old bee-keeper," reply that your correspondent would probably not have had any trouble if he had gone about the business in the way he would buy other goods? He says some dealers state in their advertisements cash with order; but does he think it fair that they should have to pay 3d. per week to tell purchasers what they ought to know the bees are being sold for, or even to have to use stationery, time, and stamps asking for cash, which may not even then be forwarded?

If he had spent a tithe of the time, money for postage stamps, &c., I have in this way, or had seen the useless questions I have been asked, in past years, he would not be surprised at not receiving any reply from a dealer to an order without cash. If a stamp or post-card were enclosed very few advertisers would fail to reply, and state *probable* date when bees or queens would be sent, for as they are usually cottagers' driven bees or queens the date cannot be definitely stated, so very much depends upon circumstances.—A. W. R., Stourbridge.

[7942.] "An Old Bee-keeper" (No. 7935, October 13 issue) has my sympathy. I purchased during this month two driven lots of bees. The advertisement stated *not less* than 4-*lb. lots* sent. The two lots duly arrived, and were very carefully weighed; then, after hiving, the empty boxes were also carefully weighed off, with the result that instead of receiving 8 lb. of bees one lot scaled 2 lb. net, the other 1½ lb. net. Another cash-in-advance transaction. I duly notified the seller, saying that it was my first transaction with him, and would be the last. No answer in defence has reached me.—G. W., Starbeck.

[The above letters emphasise the advice we have often given to buyers and sellers alike when complaints have been sent to us—"Use the Deposit System."]

BIG HONEY-"TAKES."

[7943.] It would be interesting and make for accuracy if Mr. W. H. Walker (page 410, B.B.J., October 13) and future recorders of heavy "takes" would give a little more information as to how they got them. Probably Mr. Walker's 110 lb. was obtained from two stocks working in one hive. Will he kindly state whether this is so, and, if aye or no, how the bees started in the spring, when and how he supered, and so on?—G. G. D., Camberwell, S.E.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Plea for Clarity (page 377).—The member for "Bucks" is, I think, usually so interesting, although a trifle verbose, that he will no doubt take it in good part if I ask him what he means when he gives a "verdict of 'Not proven.'" What is not proven? I have referred to page 349, and I there conclude that the non-contagious character of the I.O.W. disease is not proven. But Mr. Edwards takes the definite view that it is non-contagious, so that I am left to wonder what he means. Does he agree, or disagree, or are we both expressing ignorance? It is not often that he is not definite, even to the point of laying down the law, but in this particular number he seems to have had a relapse. Take the last paragraph for an instance of the art of saying nothing in so many words. How can he tell that bee-poison does not "give" the rheumatism in which he rejoices? If the answer be that he had the disease before the remedy, then how does he know that bee-poison will not "prevent"? Judging, of course, from his "own personality," as stated, whatever that may be. Probably this means his person, or body, unless he has been stung in the spirit by the venom of some irresponsible robber-bee hunting over his combs! And why recommend any remedy to an "incurable" case—bee-stings, above all things, if they will not cure! And who ever recommended the poison as food? It is evident that, whatever the writer's faith, his hope inclines him to keep an 'open mind; but may I remind him that, in voicing his 'opinions, the greatest of these is clarity?

The Mailed Fist (page 378).—We hear a good deal about this nowadays, but what does it amount to in the case of bee-legislation? Simply that if a bee-keeper does not himself take measures to cure infected stocks, and himself destroy condemned stocks, the work will be done for him by the local expert. At least, that is how I conceive it in practice. So that the tale of "the poor Irishman" almost leads me to comply with Mr. Samways' elegant suggestion and to say "What rubbish!" For which is better, that the poor Irishman should keep his more or less unprofitable bees or that he should be helped, in spite of himself if necessary, to put them upon a healthy and profitable basis? Mr. Samways gives free and somewhat personal play to his fancy for analogy with the apple blight, so let us deal similarly with the Irishman. As thus: the poor Irishman, who gave the authorities difficulty in securing his compliance with their order regulating cattle driving and maiming, and the firing of ricks, and found as a result the mailed fist ready to strike, does not exclaim "Happy Erin!" Why, of course not. By what right is he denied his simple pleasures?

Compensation and Destruction (page 379).—Since the formation of the F.B. Committee I have talked the matter of compensation over with a number of the members, notably Mr. Cowan and Colonel Walker, and I am prepared to adhere to their view that compensation should not be given for a valueless article. I am rapidly coming to the conclusion that a foul-broody stock is of practically no value, if not worse than valueless. So that a compensation of 2s. 6d. for a foul-broody skep strikes me as liberal. But I am of Mr. Samways' opinion with regard to the destruction of good honey, though produced in an apiary where foul brood may exist. This is quite harmless for human consumption, and the risk of super-honey containing disease is infinitesimal. Even without its destruction we should be no worse off than now, for the real danger lies in the diseased stocks, and if we do away with the disease itself we shall in time automatically obviate all danger from the product.

F.B. Committee (page 379).—Whilst not in agreement with much of Mr. Sam-

ways' criticism, ably dealt with in the editorial footnote, I yet feel that this is precisely the kind of contribution we desire to elicit from our friends the opponents of the proposed Bill. And his suggestion as to the committee's inclusion of the cottager type of bee-keeper is just. I have no doubt that if he, or another, will submit suitable names the committee will welcome the owners.

Bee-Show to Come.

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

G. H. H. (Ilford).—*Name of Honey-secreting Shrub.*—This is *Cotoneaster Simmondsii*. It is propagated by cuttings in the autumn or spring. The cuttings should be put in 4 in. in the ground.

J. T. (Heslop).—*Queen Cast Out.*—The bee is a queen, and, as far as can be ascertained, is of the ordinary black variety.

J. R. Baxter (Notts).—*Insect Nomenclature.*—The name of the fly is *Eristales tenax* (F. W. L. S.).

C. R. P. (Sleights).—*Variety of Bee.*—One worker is the ordinary English black bee; the other has distinct traces of Ligurian blood, as has also the queen.

H. E. S. V. (Tewkesbury).—*Leaving Supers in Position in Winter.*—1. You might get the bees to carry down the stores by bruising the cappings, but we are afraid it is too late in the season for them to do this rapidly now. Why not leave the super on during the winter, as you are so anxious for them to have the honey? It is not a good plan to do this as a usual thing, but permissible in a special case such as yours. 2. This system has been found impracticable by ordinary bee-keepers, and you had best let it alone. It was described in the B.B.J. in 1892, and Mr. Wells also published a pamphlet on his system, but this is now out of print. 3. Yes; leave the excluder in position; the bees will not desert the queen and brood.

Mrs. C. (Woodham Ferris).—*Wax-mites.*—The piece of comb was crushed quite flat in post, but the paper contained numerous minute wax-mites. Yes, it is quite right to have a patch of brood in centre of hive now.

W. H. (Yorks).—*Strain of Bee.*—It is impossible to say what strain a queen is without knowing something more of her history. There are signs of Italian crossing, and the queen was a fertile one. We cannot say more than this.

S. R. P. F. (Preston).—*Comb-foundation Made of Paraffin Wax.*—The writer is evidently not acquainted with the subject that he is writing about, as it is not true that bees are provided with "an artificial foundation for comb, all of paraffin wax." It is well known to bee-keepers that bees will not readily work on foundation made of paraffin, and that beeswax adulterated with this substance is rendered dry and brittle, and quite unsuited for the purpose. In experimenting with such foundation procured some years ago from America we have known the bees to refuse to work on it; they constructed combs between the sheets of foundation, and nothing would induce them to use it. No reputable comb-foundation maker resorts to such a fraud, and anyone who did so could be easily detected. Stearin, like paraffin, added to beeswax, renders it brittle and unfit for comb-foundation. Further information will be found in "Wax Craft," where the subjects of adulteration, adulterants, and their detection are fully treated.

G. S. (Bisley).—*Suspected Disease.*—The bees have "Isle of Wight disease," and we regret to say no remedy has yet been discovered. The only step you can take is to destroy the stock, burning combs, &c., and thoroughly disinfecting the hive.

Honey Samples.

R. C. (Bucks).—We are having samples analysed.

L. E. A. (Malling).—We have again tried your sample, and it tastes most decidedly like burnt butterscotch. Probably you may have some unusual flower in your neighbourhood which gives this flavour.

E. E. P. (New Barnet).—Honey is from lime, and is much too thin for exhibition purposes.

9. A. 4. (Aberloch).—No. 1 is a good light honey, and has granulated nicely. No. 2 is good in flavour, rather thin, and medium in colour. Both will do to show in their respective classes. No. 3 is a nice-flavoured heather honey, but errs rather on the thin side.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

THE CONVERSAZIONE.

(*Continued from page* 416.)

Mr. Garcke expressed his thanks for the considerate way in which the meeting had received his modest effort to advance scientific bee-culture. He wished to endorse what Mr. Cowan had said that a system like that was not set for compulsory adoption by anyone. He had endeavoured to devise a system so that any bee-keeper could select just what he considered sufficient for his purpose, but had he not dealt exhaustively with the subject he would have felt that he had not done the thing properly. He fully recognised that bee-keepers would not adopt the system in its entirety, but would like to say that he had put it in use without the aid of a clerk. He was a very busy man, with very little time for hobbies, but could say that the work he had had in keeping these records was less than that involved in those of either Mr. Reid or Mr. Lamb. He could say this with some assurance, because he had tried most of these systems. Some he had not tried, because they were not practical, and this was the outcome of his determination to find something which was faultless in accuracy. The system of taking the hive numbers he thought was absolutely fallacious. The number for the stock was practically equivalent to the number for the stand, but if one was not very careful he would very soon get the records into confusion, because if he put a card on the hive and fastened it inside, what happened to the card if the hive was changed? There were several factors, each of which could be varied, and the card must record all these variations, which would very soon lead one into confusion. He quite agreed with Mr. Lamb that the majority of bee-keepers would be wise not to attempt to number their frames. He recommended it for scientific pursuit and recording the results of the work, but in the majority of cases it would not be desirable, and in most cases the frame cards were not wanted, and the three cards would suffice, without the complication of the three-card trick. The stand card he considered the most important of the three. He put all his records on the stand cards, and made a note of the records on the hive or queen cards, until either hive or queen was removed from the stand. Thus he had his stand card as a permanent record to refer to. The work was really trifling, for in the apiary he jotted down in an ordinary notebook the date of each manipulation, then the notes of what was done to the hives in simple abbreviations; and if there was a young boy about he could be got to help, and in course of time it would be found that he would become an enthusiastic bee-keeper. The notes from this book could be transferred in a very short time. He had not had any difficulty whatever in keeping a complete record of thirty hives by means of these cards, with very little expenditure of time. The chief use of the stand card was to provide an unchangeable means of making the records, as the stand card was the only thing that remained permanent throughout the year. He quite agreed with Mr. Rogers that before any bee-keeper attempted to keep records he should attend to the hives of his bees and get them into thorough order, and until he had mastered that, and was quite satisfied that he was ready to go a step further, he had no need to bother about records. In conclusion, Mr. Garcke said he would not care for bees if he could not keep them in perfect order. He knew there were some people who simply kept them without understanding anything about them, others only with the idea of taking honey without caring how it was produced; but he hoped there was an increasing number of people who could find pleasure in the scientific pursuit arising out of the difficulty of keeping bees. He was very grateful to the British Bee-keepers' Association, because they had given him a hobby which was not confined to bee-keeping only, but which had led him to other subjects, to which he would not have been carried except for bee-keeping. A friend of his had a magnificent collection of books, scattered all over the house; every room was full of them, and they were even on the staircases; but there was no attempt at classification or cataloguing, and the only arrangement in that magnificent library was according to the size, and no reference but the periodical dusting by the servant. Another friend of his was just the reverse. He took a very keen interest in collecting microscopic slides, in mounting and classifying them; but they were rarely looked at, and he had never even seen some of them through the microscope at all. Some people kept bees without caring for them; others for what they taught them and what they led up to.

Mr. J. B. Lamb then introduced the second subject for discussion by reading his paper on "The Preparation of Bees for Winter."

In introducing to you the subject of preparing bees for the winter I intend to review but briefly the general principles of this important matter, trusting that, in the discussion which will follow, we shall be favoured with practical advice

from some of the experienced bee-keepers who are here this evening. In other words, I would like the headings of this subject to be treated simply as pegs upon which may be hung useful hints for the benefit of bee-keepers in general.

It is hardly necessary for me to remind you that bee-keeping is an industry in which success is not always achieved in proportion to the amount of money expended upon hives, bees, and appliances; in fact, with the majority of bee-keepers economy is an absolute necessity. On the other hand, many a practical hint, trivial though it may appear in itself, proves of great advantage in the apiary, and in some cases enables appliances to be dispensed with.

With these preliminary remarks I will proceed to deal with the subject before us.

The chief points to be borne in mind with the view of enabling bees to pass through the winter successfully are:

(*a*) There ought to be sufficient bees in the colony—say from 4 lb. to 5 lb. in weight.

(*b*) The brood-chamber should contain from 25 lb. to 30 lb. of sealed honey or syrup, also natural or artificial pollen.

(*c*) The hive must be watertight, and warm absorbent coverings are required to conserve the heat of the brood-chamber.

(*d*) Adequate ventilation has to be provided, space being left both below the brood-nest and above the coverings.

(*e*) Sundry incidental matters must not be overlooked, such as the prevention of roofs from being blown off and the keeping of mice out of the hive.

Let us briefly consider these headings in detail.

Size of the Colony.—In regard to the size of the stock, it is unwise to winter those that cover only two or three combs, unless for the special purpose of preserving queens that have been raised during the current year. In ordinary cases two or three of these stocks should be united in the autumn, when they will not only winter well, but will also make rapid progress in the spring, being less liable to suffer from spring dwindling. A suitable colony is one that well covers from five to six combs.

Winter Stores.—Some persons consider it to be merely a counsel of perfection to advise that 25 lb. or 30 lb. of stores should be in a hive for the winter, but this is really not the case, more especially in view of the mild autumns and winters which have been experienced for some years past. A colony with ample stores left to itself until the end of March always turns out better than one which from the end of January onwards is living on an intermittent supply of candy. The provision of artificial pollen, if sufficient natural pollen has not been gathered, is necessary for early brood-rearing, and must never be overlooked. This can be supplied by mixing pea-flour with honey, and plastering it into the cells of a corner of an end comb.

The Hive.—The hive must be watertight, special attention being given to the roof. If there is the slightest risk of the latter leaking, it is wise to put a newspaper, preferably a copy of the *Times*, over the quilts. For coverings to go over the frames, any warm materials which will absorb the moisture ascending from the brood-chamber may be used, or a chaff cushion makes an excellent and hygienic cover.

Ventilation.—Ventilation should be provided above the coverings, and for this purpose all properly-constructed hives have holes covered with perforated zinc in the roof. Extra space is advisable under the brood-chamber, and it is gratifying to find that the practice of providing this space underneath the combs, either by means of an eke under the body-box or by placing ledges of wood under the lugs of the frames, is becoming more common every year. As to whether it is wise or not to remove surplus combs I will not dogmatise, since stocks can be wintered successfully both with and without them. However, combs should always be spaced out, strips of wood or some twigs being placed over them to provide a passage-way during the cold weather.

Incidental Matters.—Little ingenuity is required to prevent roofs from being blown off, and to keep mice out of the hive; but both matters must be attended to. Mice can do a great deal of damage to combs, and they play havoc with chaff cushions, causing a thorough mess.

I cannot conclude without saying a few words in regard to the coddling of bees, a subject which has received some prominence recently in the lay Press.

There must be, I presume, more or less pleasure in posing as a reformer in any sphere of life, and in bee-keeping we have those who would alter the size or shape of the brood-frame, the internal arrangements and capacity of the hive, or the general treatment of the bees.

Whilst acknowledging that a few beginners in bee-keeping over-manipulate their stocks, yet a satisfactory feature of this failing is that they all the sooner learn how to manage them properly. I think that most experts will agree that as a rule bees do not receive adequate attention from their owners, and I personally am of opinion that many bee-keepers would obtain a greater return of surplus honey, and would find their stocks wintering much more successfully, if they would but devote more attention to their bees.

Our latest would-be reformer advises us to allow Nature "to use her pruning-knife

and weed out the weaklings." When it is recollected that attention devoted to a weak stock will often enable it to develop into a strong colony, and as a result to gather surplus honey, most bee-keepers will decide that, from the point of view of "income and expenditure" or of "profit and loss," Nature's pruning-knife had better be relegated to some other industry. We all know that if a stock is not up to the mark in regard to the vitality of the bees it is a simple matter to introduce a young and vigorous queen, thus setting matters right in the course of a few months.

Mr. A. W. Salmon supposed Mr. Lamb meant them to understand that pollen should be given to the bees at the end of the season when feeding up for spring or late winter. With regard to telescoping hives, would there be sufficient ventilation out of the roof if there was just a flat roof on the hive? He thought it rather a good plan to leave a fairly large amount of space in the roof so that the evaporation of moisture would go off better. Did Mr. Lamb give them to understand that it is necessary to have from 30 lb. to 35 lb. of stores for every 4 lb. or 5 lb. of bees?

Mr. G. Hayes understood Mr. Lamb to say that in some cases a wedge was put underneath the lugs of the frames to lift them up. He thought it would be better to keep the frames in position, and put some wedges underneath the corners of the body-box and lift them altogether, rather than lift the frames out of their places. Then in reference to feeding with artificial pollen, he quite agreed with giving bees pea-flour mixed with honey, but it might interest some to know that he had fed bees with pollen by placing the mixture in a little receptacle on the top of the frames, and they had taken it down for their requirements. Moreover, he had noticed that they had separated the honey from the pollen, and had placed them separately in different cells. He had been able to identify the pollen under the microscope, although it could be identified with the naked eye on account of its colour.

Mr. O. R. Frankenstein hoped some experienced bee-keepers present would explain why combs became mouldy in winter. He took great care of his bees, but in spite of sloping the hives a little to the front, he found that last season he had some excellent frames that were more or less quite spoiled because of mould.

The Chairman (Mr. T. W. Cowan) said there were several veteran bee-keepers present, and he was sure the members would like to hear their views.

Mr. W. D. Woodley, in response to Mr. Cowan's invitation, said he had wintered bees for a good many years very successfully, but he had never thought of such a thing as mixing pollen with pea-flour and honey. Even if he knew that the hives were full, he did not think it would be advisable, because it would induce breeding out of season. Generally speaking, in country districts bees have a sufficiency of pollen to carry them through the season—at least, he had found it so in his district—for in some districts more pollen was collected by bees than in others. He found that bees gathered more in his home apiary than they did in the out-apiary. Mr. Lamb's proposition would be all right in some districts, but not in others. He always made it a point to give artificial pollen early in the spring as soon as the bees began to get about. He placed it in a warm, sunny corner of the apiary, and had proved beyond doubt that it started breeding earlier than in his out-apiary, where it was not given regularly. He placed a few shavings of wood-wool in an old skep and shook some pea- and wheat-flour mixed in equal proportions on the shavings, and his bees always took it at once. On more than one occasion bees had settled on the shavings, and begun collecting the pollen almost before the skep was out of his hands.

Mr. J. Pearman endorsed the main part of Mr. Lamb's paper, but said that in his district there was no need for artificial pollen. Pollen was one of the greatest evils he had to contend with, for sometimes his hives were not half-full of brood because of the pollen. If anyone wanted to give bees pollen he thought there was nothing better than putting pea-flour with little pieces of stick into crocus blooms, and as fast as it is put in the bees will take it—faster than from shavings or any other way. With regard to Mr. Frankenstein's remarks, he thought all had suffered from mouldy combs; but with sufficient bees to cover them he did not think he would be troubled with mouldy combs.

Mr. A. E. Paul agreed with the last speaker on both points. He found there was no need to feed with pollen, but rather to clear the combs of it. He only got mouldy combs in weak stocks, and put it down to paucity of bees.

Mr. W. F. Reid did not suffer from mouldy combs because he used a dummy board, and also that he put on the bottom lower part of the hive a piece of lamp-wick just a little wider than the width of the wood, with the result that the moisture got out. In a hive that was in a very cold position there would always be moisture on the inside. He had had much less mouldiness since he had adopted this simple device. Then with regard to feeding bees. It might probably seem somewhat of a heresy, but he had not fed his bees with candy at all for some years. Many years ago he had a very simple domestic appliance—a feeding-bottle, which had a

little glass valve and rubber tube, and he simply fixed it in a bottle of syrup that was thin enough not to candy, and slipped the tube through into the hive. If the bees wanted syrup they took it, if not they left it. He modified the valve a little by lengthening it and making it into a crook, and had found that this method had always kept the stock alive. With regard to keeping the roof on, if a little hole is made in the two sides of the hive through the roof and body-box and nails slipped in, that would hold it down thoroughly. In a very windy or exposed position two smaller holes in connection with the frame fastened in the same way would resist the strongest wind. He quite agreed with Mr. Lamb's appreciation of the *Times* for a covering. It was an excellent paper and did not go mouldy, and sometimes served a useful purpose, but for himself he used celluloid quilts; no moisture got into the wrapping or to the bees themselves, and, personally, he had never had any trouble in this respect. For outer packing chaff was very useful, but he preferred wood-wool if it could be obtained, as it kept in the heat well. Cork was best of all, but was rather messy and difficult to get into place, and wood-wool would be found a good substitute. Another problem which he thought they might try to solve was "How to get pollen out of the combs." This was a matter which had received some attention, and it would be of interest to many bee-keepers to know how to do it.

(*Concluded next week.*)

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE-PEST LEGISLATION.

THE QUESTION OF COMPENSATION.

[7944.] In the belief that my opinion as to the desirability of a Bee-Pest Bill had been clearly enough expressed when the last effort was made to promote legislation, I had not intended to take any part in the present discussion. As, however, my name was mentioned by Mr. Crawshaw in the last issue of B.B.J. (page 421), I should like to say a few words, the more so because the general position has slightly changed.

I have always been against the principle of compensation in sanitary cases, to me a sign of national decadence, born of an age when sense has become drowned in sentimentality. Our Colonies and the more virile branches of the Anglo-Saxon race entirely refuse to hear of it, taking instead the view that in a well-regulated community it is every man's duty to see that neither he himself nor his belongings are in any way a source of danger or even a nuisance to his neighbours.

Apart from this, why in the present case should there be compensation? If a man's bees are worth saving, he is to be shown how to save them, and if they are in a frame-hive how to disinfect it. Only what is worthless need be destroyed. (The honey I will deal with later on.) If his bees are in skeps, the Bill again does him no harm. The skep could not be disinfected, and remains only a source of danger to himself as to his neighbours; it is therefore valueless. You may be sorry for the man's trouble and disappointment and for his having lost his bees. This may be a good reason for your starting him afresh, or for the establishment of some system of insurance on the lines of what we have at present. But the Bill will not have brought about this misfortune; rather will it, without compensation, have helped him.

Another reason against compensation is that it not only renders the introduction of the Bill more difficult, but will be a constant, though it may be hoped decreasing, obstacle to its being properly carried out. The rates are already high enough, and, apart from compensation, the expenses of administering the Bill will be, though not necessarily large, an unwelcome addition. For this reason I will have nothing to do with a Bill the adoption of which, as was the case in the last one proposed, is left optional to the county authorities. It must be universal in the United Kingdom, and administered, in the main at all events, by a central authority, such as the Board of Agriculture.

The case against seems to me very strong. If it be urged that in other matters, such as swine fever, compensation has been established, my answer is that even if the cases were similar I should be unwilling to add to an existing evil. But they are not similar. The owner of an executed pig loses an animal the flesh of which he might easily have sold advantageously to himself and at the same time to the danger of the consumer. The bee-keeper's case is quite different. No obstacle should be placed in the way of his selling his honey, whether the apiary is diseased or not; it will not injure the consumer. Moreover, the danger of spreading the disease in this way is small, and cannot logically be considered while honey from any foreign quarter is admitted and may be sold without question.

I would only in every possible way reiterate the advice, "Never feed bees on bought honey!"

I cannot close without saying that, although I do not here advocate its introduction into the present Bill, I am entirely in favour of a clause making it illegal to keep bees in any fixed-comb receptacle. Till this is done there will be no safety. The provision would be no great hardship. Frame-hives are very cheap now to buy, and can be made at home more cheaply still from waste material, all but the frames. When you consider that a body-box and cover together represent a skep, and that there is no longer any market for honey not produced in supers, the difference becomes very small.

I have lately discovered foul brood of the non-stinking but by no means non-virulent type in two of my hives—the first case for more than twelve years. No doubt it has been introduced from a neighbouring apiary. I have no personal feeling in the matter. If I find it next spring in my other hives, and have to suspend bee-keeping, it will be only my poorer neighbours who will suffer. But the point is this: To save trouble and expense to the association and to third-class candidates for experts' certificates, I keep some half-dozen skeps in another place near by. How can I tell what state they are in? I suppose I may call myself a capable expert; if not, then much pains and experience have been thrown away. But I could not certify those skeps as healthy without driving the bees and cutting out most of the contents of the skeps. No travelling expert has, at present, the right to do this, and if he had it would be a troublesome operation, so that skeps in general must always remain a grave source of danger. A friend of mine in the county has tried to start bees three times, and had to abandon further attempts because an obstinate skeppist living a few hundred yards away, and whose apiary is known to be diseased, will not allow any examination or interference. Such cases are common enough. It would be a great step towards safety if the use of skeps, old soap-boxes, and all such fixed-comb receptacles as permanent abodes for bees were made illegal here, as it already is in Australia.—H. J. O. Walker (Lieut.-Col.), Leeford, Budleigh Salterton.

"ISLE OF WIGHT DISEASE."

[7945.] I should be glad if you could find space for a comment on the above as regards how far this disease has spread and if increasing. I myself know of more than a dozen stocks that have ceased to exist through it, all within a radius of four miles. Of course, it is far from comforting to a bee-keeper of any extent to find his stocks decreasing in this fashion, and it makes one consider whether it is worth while adding to one's apiary. I have nineteen hives, and so far have escaped it, but who is to say whence it comes and whither it goes?

I have in my mind a case of four hives, all crowded with bees, with splendidly healthy combs, ample stores, and queens all laying. This was the condition on August 28; a month later all were gone, a goodly portion to be found clinging to nettle-heads and weeds, &c., each day. In my opinion, this disease cannot be too widely discussed, so that people shall be able to recognise it directly it appears, and it would be very interesting if some of your correspondents who have come in contact with it will say whether it has increased or decreased in their district.—S. B., Olton.

REMARKABLE HONEY-GATHERING.

REPORT FROM KIRKCOWAN.

[7946.] It is now two years since we sent you a report on our honey harvest. As regards last season, it was a complete failure, but the bees went into winter quarters with natural stores secured from the heather, and consequently were in good condition this spring. All stocks had brood hatched early in February, and were doing well until the middle of April, when queens stopped laying for over a fortnight. The weather was worse than in winter until about May 8—a very bad prospect for the bee-keeper. No young bees came out for over a fortnight, when as a usual thing they should have been hatching out at the rate of more than a thousand a day, taking a low estimate. When the weather improved from the middle of May bees began in earnest, but the time was too short to take full advantage of the clover bloom. About June 22 the weather changed again for the worse, and did not improve up to July 8, when we had the best honey spell from that date to the evening of July 19 within our experience. Our seventy-two stocks (worked for extracted honey) had one super of drawn comb upon each. They drew out other seventy-four supers, and gave us 5,350 lb. of honey in the thirteen days. The sight of the bees working was one seldom seen, and remarkable enough never to be forgotten. The combs being all drawn out, if we had had another week longer they might have gathered 4,000 lb. more, but instead we had to watch to keep the bees from dying with hunger. The weather began to improve on September 3, and they gathered about half as much as would winter them. We have them all fed up now. We got over fifty driven lots, which were used to strengthen

stocks. Driven skeps on an average did not contain 3 lb. of honey each, and 10 lb. was the surplus in the best skep we drove this season.

We have not a Scottish-bred queen in the whole apiary; we find the queens from driven bees in England far more prolific, and they commence laying at least one month earlier. All our honey was sold to two firms. If favoured with a good season in 1911 we ought to do well. We have a good stock of drawn-out combs ready. Wishing brother bee-keepers better luck in 1911 than we have had for the past few seasons.—ANDREW MUIR AND SONS, Kirkcowan.

PLANTING TREES.

A WORTHY EXAMPLE.

[7947.] A well-known and highly-respected resident in Mid-Sussex, Mr. H. Burt, of Loxley, Burgess Hill, to commemorate his term of office as chairman of the District Council, planted last autumn upwards of eighty trees at his own expense on each side of the main London road, which cover a considerable distance. I was pleased to find that one-half of these trees are limes, so Mr. Burt will have earned the gratitude of bee-keepers (about forty in number) in this district for many years to come. I take this opportunity of suggesting to fellow-readers of the B.B.J. that they use their influence and point out the value of limes when councils and other public bodies are planting trees in numbers, so that they may choose trees which are useful as well as beautiful.—A. G. D., Burgess Hill.

THE NEW DISTEMPER OF BEES.

[7948.] With reference to Mr. Edwards's remarks on page 376 (B.B.J. of September 22), as one having had considerable experience with the new malady, may I say I have found the disease shows itself in various ways, and in my opinion Mr. Edwards is wrong in saying it usually arises with a swarm, showing itself from ten to twenty days after the swarm is hived, whilst the parent colony shows signs of infection some three days later. Does he mean twenty-three days after the swarm has left the parent hive or three days after? I have known swarms to show this malady two days after hiving, and the parent stock not to show any signs until about six weeks later. If Mr. Edwards means the parent stock shows the malady three days after swarming, how can it usually arrive with a swarm? Evidently the sulphur treatment as mentioned has some virtue in it if a colony treated with it comes through the winter, while other colonies succumb to the disease in the same and other apiaries; but the statement, "the owner being wishful to avoid any stray infection among the new colonies, he provided himself with," &c., reads as though he was a careful bee-keeper. If this treated stock was cured and free from the disease in the spring, why should the bee-keeper have destroyed it? It looks rather as though the colony was not cured even after the sulphur treatment. If Mr. Edwards will say if this colony showed signs of the malady or not in the spring, it would no doubt be of considerable value in proving whether the sulphur treatment is of any use or not.

Mr. Simpson (page 348), by dusting the bees and combs with sulphur, showed a great lack of knowledge in respect to the rearing of brood, and also the treatment of bee-diseases as described in the "Guide Book," and I hope before he makes experiments again he will obtain a little knowledge of the interior working of the hive in respect to the rearing of young bees. From my own experience, I am afraid Mr. Simpson, and also Mr. Edwards, will find the supposed cured colonies will show the disease as badly as ever, even if they survive the winter. Will either of them say if they think the sulphur drives out of the hive or kills off the old bees of the colony (it is very evident that it is the foraging bees which are affected with the malady), or does it kill off a quantity of the young larvæ in the combs, therefore stopping the hatching of bees for a time, this cessation meaning a break in the strength of the colony, no malady being seen for a time, then when the hatching of young bees is proceeding again the disease reappears.

Mr. Edwards says if the colony is not wiped out at the first attack the disease disappears in about three weeks, only to reappear in an aggravated form about the end of September. If this statement holds good, it is a long twenty days and a long three weeks from the swarming-time (which is usually May or June) to September or early October.

Mr. Edwards also mentions the parent colony showing signs of infection. Is the malady infectious or not? I should like to hear the proof of his being able to say it is infectious or not. If so, how has he come to the conclusion it is not contagious? Mr. Simpson says it is, Mr. Edwards being the close observer and director, Mr. Simpson the operator and the assumed physician. Where are we? It would be interesting to know what these two gentlemen think is the cause or source of this malady.—T. A. P.

BIG HONEY-"TAKES."

[7949.] With reference to "G. G. D.'s" letter (page 421) respecting the above, I beg to inform him that I know of a case

in Bristol where nearly the amount given by Mr. Walker was obtained from a single stock. In this case a strong colony of hybrids on ten frames was supered on May 1 with a rack of shallow frames fitted with full sheets of foundation, the owner having no drawn-out combs. On May 29 the super was filled with beautiful honey from the fruit-bloom; the weight of the rack complete was 41½lb. As soon as this was taken off two more racks were supplied, and by the end of July these also were filled and sealed, the gross weight turning the scale at 80 lb.

The total weight of the racks, comb, and honey was, therefore, 121 lb., and, allowing 21 lb. for the weight of the three racks and accessories, we have a total of 100 lb. of honey. Had the owner possessed some drawn-out combs I think it probable that Mr. Walker's total would have been surpassed. I freely admit that I have never had anything approaching this from any of my own hives, but I took the honey from the hive myself, and the owner and his family can vouch for the truth of this letter. The last honey taken was mostly from the lime, but was (for lime honey) very good. I may mention that the stock was headed by a 1909 queen.—A. GRIFFIN, Bristol.

[7950.] Your correspondent "G. G. D." (7943, page 421) seems rather to doubt Mr. Walker's 110 lb., since he uses the phrase "it would make for accuracy if," &c., and I therefore hesitate to report that my "take" from eight hives was 490 lb., two of which hives only produced 40 lb. One stock gave me 160 lb., and would have given much more but for the wet August. I am amazed to read of the bad season in many quarters, inasmuch as we are told it is "always raining in the Lake District." For once we have rather scored off the critics of our climate. My principal hive contained only one stock, which went into winter quarters in 1909 in grand order, having been very carefully nursed through that shocking season. The queen (ordinary black) was a tip-topper; she laid for all she was worth, and the rest of the bees worked like niggers. I stimulated correctly at the earliest opportunity in spring. They got on to the orchards, and were soon upstairs off them into an extra body-box; then came the shallow frames, which were very rapidly filled from the clover—a magnificent crop blooming in (mostly) grand weather. I had two other hives, each with five section-racks on, and I can assure you such were the height and weight of the hives that I sometimes almost wished the honey-flow would cease. Probably it sounds rather a romance. However, there is the statement, which may be suspected to any extent, while my family swallows the nectar and I pocket the financial results! I sell at 1s. per lb. to private houses—never to shops—and I have no difficulty whatever beyond the trouble, and a little rheumatism, for which the stings are welcome, though no sensible person would expect them by themselves to be an immediate or complete cure for this complaint. There is something wrong in the system and the blood, and only a fool would sit on a skep and think of rising perfectly free from the disease, which, like bee-keeping, should be studied.

I am sorry I cannot give "G. G. D." definite and precise records, because I made no notes. In future I propose to adapt Mr. Garcke's admirable method and if you care for my experiences since 1890 I will send them some day. [We shall be very pleased to have them.—ED.] With industry, perseverance, study, and intelligence—applied on the best scientific methods—failure in a good season is impossible in a favourable locality. There are many conditions necessary to success, and these must all be rigidly observed. With luck next year I hope and intend to do better. A friend, located six miles away, tells me he took 560 lb., but I think he had over a dozen hives contributing to this result.—J. W., Helsington, Kendal.

BEE-KEEPING EXAMINATIONS.

[7951.] It was my intention to aim at obtaining an expert's certificate, but, on inquiry to that end, I find that it is first necessary to satisfy the examiner that one can successfully drive a skep of bees. Now, so far as I can discover, skeps are, fortunately, obsolete in this part of the country. The secretary to the Manchester Bee-keepers' Association tells me that he has seen none in use; and advertisements in eight newspapers circulating in the rural districts hereabouts failed to bring me any offers of skeps to drive.

In these circumstances I must either import a skep for practice—reintroducing an admittedly undesirable method of bee-keeping, and spending money and time in acquiring a proficiency that will avail me little or nothing in the future—or I must present myself for examination without preparation, trusting that theory, luck, and an accommodating examiner will procure me a certificate for a haphazard manipulation which is no measure of my actual apiarian skill.

I submit that the B.B.K.A., by insisting upon proficiency in driving, tends to retain a system of bee-keeping which its efforts in all other directions endeavour to suppress.

Upon these grounds I would ask the examining committee to consider the advisability of making for the future a

thorough mastery of bar-frame hive manipulation *the* obligatory subject for examination, allowing, if thought desirable, driving to remain as an optional subject. A candidate satisfying the examiner in both subjects might have the fact noted on his certificate or be granted a certificate with honours.—H. R., Lancs.

ENGLISH HEATHER-HONEY.

[7952.] With reference to the letter from "Medicus" in B.B.J. (page 395), I should like to say a word in defence of English heather-honey, of the quality of which he seems to have no good opinion. I also note he mentions honey from bell-heather and wild thyme which reminds him "of some purchased at the 'Royal' Show at Newcastle in 1908 labelled 'Pure Derbyshire Heather-Honey.'" As I was an exhibitor of heather-honey from Derbyshire on that occasion, I consider that this statement might reflect adversely upon my honey, of which I am *justly* proud, as the following facts will show. In 1907, at Kilmarnock, N.B., it was awarded first prize by the judge (the Rev. R. McClelland), taking fifty points out of a possible fifty (I enclose my show-card for the Editor's inspection). Again, at Carlisle in 1909 and 1910, when Mr. D. M. Macdonald and Mr. L. S. Crawshaw acted as judges, I obtained first prize in the heather class, one of the judges remarking afterwards that it was a "perfect heather-honey." It can be seen from the prize-list how the Northern heather exhibits figured at the Grocers' Exhibition in competition with that from Derbyshire. It was my heather-honey that the late Mr. Carr chose to send to an exhibition in South Africa as a fine sample of British heather-honey. These facts speak for themselves, and my neighbours at the heather hills of Derbyshire have produce of equal quality to mine.

In conclusion, I may add, as a successful exhibitor, that I have doubled my successes at shows since I started taking my bees to the hills for the heather season.—J. Pearman, Derby.

ADVERTISING EXTRAORDINARY.

A correspondent, Mr. A. Tew, sends us the following amusing advertisement which appeared in a contemporay last week: "For sale, or exchange for pigs, 2 frames of bees in good condition; no honey been taken for two years; also empty one, 40 lb. to 50 lb. in each.—Apply." &c.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Pure Honey.—Turn to *Gleanings*, please, at page 591, and you will find a contribution headed "New Combs Not Needed for the Production of Fine Light Honey." I join issue with the writer. If produced in old combs the pure white honey will certainly contain impurities. He says he finds no trouble in producing fine light-coloured honey in old combs. Let the writer use a microscope and look at his light honey, and he will be surprised at the amount of "contamination" which will make itself manifest.

Flour Introduction.—In "Notes from Canada" "a well-known British bee-keeper who originated the method of introducing queens by flour" is named. If he did, I never heard of it until now, and I most decidedly place the discovery of the successful application of flour as a bee-quietener to the credit of a Scotchman—not the writer. I have, however, used it steadily for over twenty years as a means of safe introduction, and as the best, readiest, and most efficient means of uniting any two bodies of bees. I trust Mr. Holterman will find it a full success. By the way, I looked on this Canuck as a very accurate writer on bees until lately, when in reasoning against my claims for blacks he grouped Carniolans with this variety!

Basswood.—Now and again a Cassandra wail goes up in one or other of the bee-papers over the depletion of the basswood area, and some prophets predict that the supply will soon fail. Dr. Miller (?), in an editorial, consoles us by stating that there are other timbers "just as good as basswood, or better, and at a less price," which can be manufactured into four-piece sections, which some think are preferable to one-piece ones. In my early bee-keeping days one of our most extensive apiarists would have nothing else than four-piece, and I never saw finer sections than he turned out. Therefore we need not get nervous or fear that the days of our sections are numbered. (Would it be too much to ask that the editorials in the Old Reliable might be initialled?)

"*Nucleus and Nuclei.*"—Mr. York (?) lectures on this topic, and does it well. Frequently there is an abuse of words in connection with the use of these as adjectives. But my Chicago friend is out when he holds me up as a sample transgressor. I spoke of "nuclei-forming"—i.e., forming nuclei. Where does the use of the word as an adjective come in here? I know the proof-reader of this journal was wide-awake when he passed the term without amendment. Nucleus plan or nucleus plans would be all right; so would nucleus hives or nucleus hive, but I will still stick to "nuclei-forming."

History Repeating Itself.—The *Canadian Bee Journal* quotes from a German source an instance of a famous cycling racer who recommends from personal

knowledge the use of honey as a stimulant. It has the advantage of being easily absorbed, and it gives the muscles new strength and new life without overloading the body. I go back to a very early period of the world's history and call up a parallel case. Jonathan, after a fatiguing day's fighting in the wood of Ephraim, felt strengthened and refreshed by partaking of the honey found in the trees. "I but tasted of the honey and mine eyes were enlightened."

The Latest Out.—"All parts of hives in which infected colonies have been should be scraped clean, and the refuse burned. Frames and section-boxes, being inexpensive, are usually burned. The inside parts of hives, after being thoroughly scraped, should be sterilised by fire. A gasolene torch is commonly used, but any method which will char and blacken the wood will be satisfactory. Cracks, corners, and crevices must not be neglected. A hive *thoroughly flamed* is safe to use again." This was written by Dr. Burton Gates, but it actually appears in the *C.B.J.* Truth will ultimately prevail!

Honey Samples.—The Victorian Agricultural Department had a large number of samples of home and foreign honey displayed at the late Conference. Many of those present had "a great leaning in favour of white and yellow box honeys, and there was very little said in favour of *heather honey.*" I rather admit that a pressed specimen of this delicious sweet does not look over-pleasing to the eye, but the flavour is the acme of perfection! By the way, I was not very much impressed by the display of Antipodean honey at the "White City." Dandelion was very prominent in the various blends.

Willow Herb.—The *Review* supplies us with an illustration of this bountiful bee-plant, and we have also a beautiful picture of an apiary showing most of the hives four bodies deep. The description of the plant is such as would make one desire to possess a wide spread of it near one's apiary. "There is no plant with which I am acquainted that furnishes more honey in a season, and the honey is the whitest and sweetest I have ever tasted." A story is told of some men planting down a load of hives near this source of nectar. In a little more than two hours they made an investigation of a hive-interior, and found several pounds in the central combs. The "A B C" speaks well of this bountiful bee-plant.

Bee-Show to Come.

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St. Albans.

Queries and Replies.

[4052.] *Time for Removing Surplus.*—Will you kindly answer the following in the B.B.J.? 1. I have to take my honey from the hives either before July 22 or after August 22. Which would you consider the better time, and why? 2. Should the jars in which the honey is to be kept be made quite airtight? Thanking you in anticipation.—NOVICE, Leicester.

REPLY.—1. It will be better to remove the honey after August 22, as it will have a much better chance of ripening and also give the bees ample time to seal it over. 2. The ordinary screw-cap jars are sufficiently airtight for the storage of honey.

[4053.] *Wintering with Section-rack in Position.*—1. I should be obliged if you would say in the B.B.J. whether it is advisable to put an *empty* section-rack over the frames for wintering. I remember reading that some bee-keepers put a section-rack on, but whether full or empty I cannot recollect. 2. I think my bees have some uncapped stores, as well as a lot capped over. Is it advisable to feed up with warm syrup so that they can cap it? 3. I notice that you have been saying that it is too late to feed. Why is it? 4. On the 16th inst. I put a "Porter" bee-escape under my shallow frames, but next to none of the bees went down. I had to brush them off the combs. Can you account for this? The escape was not blocked.—E. R. H. H., Barnard Castle.

REPLY.—1. The object of putting an empty rack over the calico quilt is so that it may be filled with chaff or cork-dust, to make a warm, ventilated covering during the winter for the bees. 2. Your second and third query answer the fourth, if you read it carefully. If bees are so drowsy that they will not go through a "Porter" escape, which is the case late in the year, you will quite understand why it is too late to feed with syrup now. They would in all probability refuse to take it, and, if they did, would not seal it over, because the weather is too cold for wax-secretion; therefore they would be liable to have dysentery. Put on some large cakes of candy if you are at all afraid that the food-supply is insufficient to last through the winter months.

EXTRACT FROM CONSULAR REPORT OF THE DISTRICT OF ODESSA, 1909.

Apiculture — Honey and Wax. — In former times, when cane sugar was ten times as dear as fresh beef and before beet sugar was invented, honey was much needed for its sweetness and for making

mead, and beeswax was required for export as well as for internal use.

According to Dr. Giles Fletcher, sent to the Emperor of Russia as British Ambassador in 1588, "furres of all sorts" were then the principal exports. "The second commoditie is of waxe," of which he heard that 800 tons had formerly been exported yearly, a quantity which at his time had shrunk to 160 tons. "The third is their honie," whereof there was also considerable export.

A quarter of a century ago the hives were neglected, but soon after the value of honey for health, and the functions of bees in fertilising flowers, were recognised, and of late attention has been given to the improvements of breeds of bees and their culture. The production of honey in Bessarabia (which is about two and a half times the area of Wales) was in 1900 108 tons and in 1905 226 tons. The wax produced was in 1900 29 tons and in 1905 59 tons. Later figures are not given, but the development continues. Beeswax is at present imported from London, Lisbon, and Marseilles.—*Transcribed by G. Judge.*

WEATHER REPORT.

BARNWOOD, GLOUCESTER.
September, 1910.

Rainfall, ·63 in.	Warmest day, 3rd, 71.
Below average, 1·95in.	Coldest night, 20th, 30·5.
Heaviest fall, ·5 in. on 14th.	Relative humidity, or percentage of moisture in the air, 78.
Rain fell on 7 days.	Number of days with sky completely overcast at 9 a.m., 12; do. cloudless, 1.
Total to date, 21·42in., as compared with 18·29in. for the corresponding period of last year.	Percen tage of wind force, ·75.
Mean maximum temperature, 63·1; 1·9 deg. below average	Prevailing directions N.E. and N.W.
Mean minimum temperature, 46·4; 4·6 deg. below average	

F. H. FOWLER (F.R.Met.Soc.).

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

H. R. (Cheadle Hulme).—*Several Nuclei in Hive.*—1. If the nuclei were formed from one colony with queen-excluder between each, queens reared in them would be safe, provided they did not pass through the excluder. Virgin queens, however, are sometimes small enough to do so. 2. Yes. 3. There would be no danger of the bees fighting if all the queens but one were removed. 4. The same excluder-zinc will exclude drones, and no other size is used. 5. No publisher's name is given, the article being a reprint from the *Journal of Economic Biology*, 1910, vol. v., page 2, and is not on sale. You could probably get the journal through a bookseller. 6. The writer in *Countryside* to whom you allude evidently knows very little of the subject. The spur on the middle leg and the sting have nothing to do with excluding drones, which are driven from the hive and perish for lack of food.

D. M. (Dingwall).—*Hybrid Bees.*—By some means Italian blood has been introduced amongst your bees. Most probably there are bees of which you are not aware nearer than two miles from your apiary, or they may have come as a May swarm or cast. The yellow-banded ones sent are Italian hybrids.

HEATHER JOCK (Scotland).—*Pollen-covered Bees.*—1. The silvery appearance is caused by the bees gathering pollen, probably from hollyhocks. 2. Yes, it is quite time to stop feeding. All stores should have been sealed over a fortnight ago. 3. It is advisable to put a little naphthaline among the quilts, also the usual two pieces on the floorboard.

C. B. H. (Leicester).—*Wintering Bees.*—1. It was rather risky to feed out of doors. Not only might you have caused robbing, but you probably fed other people's bees as well as your own. 2. Choose a nice warm day and carry out the operations you suggest; it will be much better to do it now than run the risk of losing the weak lot in the winter. 3. Give a cake of candy to any stocks where the food-supply is doubtful.

W. R. M. (Church Fenton).—*Deposit System.*—You will find an announcement of the Deposit System among the advertisements on page ii., and it would be advisable to cut it out and paste it up for reference, as we frequently have no space to spare for its insertion, though we insert it when possible. By using this system both buyer and seller are protected.

Suspected Disease.

H. H. (Alton).—We do not think either of the first-named remedies would be beneficial, but you might try the sulphur treatment.

F. O. (Strand).—Bees are suffering from "Isle of Wight disease," and should be destroyed at once.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

THE CONVERSAZIONE.

(*Concluded from page* 426.)

Mr. A. E. Paul cleared his pollen-clogged combs by soaking them for a couple of days in water, and then he turned the garden hose on to them.

Mr. W. Herrod had not heard Mr. Lamb say anything about re-queening in connection with wintering. He thought re-queening where necessary was one of the most important things to attend to. Many people leave preparing bees for winter until about October or November, just when they think the cold weather is coming on, instead of commencing immediately they remove the supers. Re-queening at that time was one of the most important things to attend to. He took it for granted that all bee-keepers had new queens on hand ready to replace those which had been deficient, and they should know by the notes they had made which queens should be replaced. Most bee-keepers consider spring the time to re-queen, but he preferred the autumn. First, because of the expense. Queens are cheaper to purchase in the autumn than in the early part of the year. Second, if re-queening is done in the spring the queen is put into the hive several weeks after she should have been doing good work in the colony of which she was to be the head. Therefore, unless the queen is placed in the hive to carry on the work in the autumn and early spring, the desired results are not obtained. Feeding, we know, is carried on in various ways. In the autumn-time it is generally by rapid feeding, but it is much better, if the colony requires feeding, to commence stimulative feeding immediately the surplus honey is removed by giving to those colonies which require food the combs which are damp after extracting, by which the queen is induced to lay later than she would otherwise do. This year he had examined colonies in August in which the queens had given up laying altogether. In one apiary of nearly 300 colonies he did not find more than thirteen or fourteen with brood, simply because stores had ceased to come in. In such colonies there would be a good many old bees going into winter quarters, and undoubtedly there would be much spring dwindling the following year. Stimulative feeding should be commenced with food of a proper consistency—i.e., thick. It should be given gradually at first—two or three holes in the bottle-feeder—and this would induce the queen to lay longer, and also allow the bees to store it and seal it over. It is very important that bees in wintering should seal over their stores, and also that the hive should be well packed with bees. Those bees going into winter quarters with unsealed stores are generally found to suffer from dysentery the following spring. If it is necessary later to give more food, the bees should be fed rapidly by means of a rapid-feeder. Candy is very useful, especially in those colonies where one is uncertain as to the food supplies, because it enables one to see readily the state of the food supply down below; but care should be exercised, as very often he had found bees living on the candy in preference to the sealed food in the combs. With regard to placing slips of wood under the lugs of frames, he had not seen this done, but considered it would be fatal to the colony. In the spring we should get what we try to avoid—a direct draught through the brood-chamber, and unless the top is covered in very warmly one could hardly prevent a draught striking right through if the frames are raised in this manner. Quilts, of course, need consideration. Many used American oil-cloth for quilts, and he did not know that a worse material could be used. It was placed with the glazed side downwards, and because ventilation has not been provided you get damp inside the hive, and consequently mouldy combs. If one must use American oil-cloth (which is a very clean material to use), then place a piece of calico over the feed-hole flap, which should be turned back, so that you get ventilation right through the quilt. Good quilts should be put on the colony, but very often one finds that the bee-hive is a receptacle for old cast-off wearing apparel, and he had found many different materials used on top of the hive. The newspaper mentioned was a very useful article for keeping bees warm, but he preferred to use under felt of carpet, which could be tucked down very snugly; it allows ventilation, and bees winter very well if covered with three or four such quilts. The hive should be kept neat, and if there was one thing he disliked it was to see it made a receptacle for all kinds of rags and the other rubbish he had mentioned.

Mr. Pearman and Mr. Paul had spoken of having too much pollen. Many were troubled with it, but in passing he would give them a wrinkle which would prevent it to a large extent. They would find that by using in the springtime a queen-excluder, preferably one in the form of the "Brice" swarm-catcher, it would clear off the pollen from the legs of bees and prevent them from carrying it into the hive. But, of course, this should be done only in special cases. Ventilation was not only necessary above the brood-

nest, but also at the entrance, which during the winter should be open 6 in. to 8 in. In January and February, when snow was on the ground, care should be taken to guard against light being reflected into the hive. He had found that preparing bees for winter was the best opportunity of weeding out faulty and undesirable combs. No matter how one works, there will always be a certain number of combs with an excessive number of drone-cells. A good plan when manipulating bees is always to place all faulty combs at the outside of the brood-nest, for in wintering these combs can be left out, and the following spring they can be replaced with frames filled with foundation. If bee-keepers would replace combs more frequently than they do at present we should hear far less of disease. It was a thing much neglected by bee-keepers, and he did not know why, unless it was on account of expense incurred in purchasing foundation, or the trouble necessary.

Mr. W. P. Meadows would like to ask Mr. Reid how he manages his syrup in the winter-time with the feeding-bottle. Does he not get too much moisture with the celluloid quilts, and does he not find celluloid quilts objectionable on account of their smell? He thought covering with wood-wool was a very good idea, and with regard to securing roofs he found that the simplest and best plan was to have a hole through the outside of the roof and fasten it with a plain clip.

Mr. Reid said Mr. Meadows had made of celluloid a number of articles of a very useful nature, and he had done more service to bee-keepers in introducing them than he apparently thought. In reply to his questions, he would say, with regard to the smell of celluloid, that it was due to the camphor, which was very volatile; but one of the advantages of celluloid was that it was perfectly watertight. He had used some of these quilts for the last ten years, and they were as good as ever, and if kept in the open air for about a week the objectionable smell disappeared. He had no trouble with condensation at all, and if there were plenty of quilts on the top it would not be cold enough for moisture to condense, which only happened if there were not enough bees. By using the little device he had mentioned, of putting a piece of lamp-wick in the bottom, he was never troubled with wet. He recommended wood-wool as packing in the ends of the quilts, but he had no doubt that if it could be had in the form of a quilt it would answer a very useful purpose. One of its great advantages was that it did not attract clothes-moth. In order to prevent the syrup from candying and choking the feeding-tube, the syrup was kept in a can in the open in a shady spot. The temperature in the hive will then always be above that of the syrup as used, and there would be no crystallisation of the sugar. Mr. Lamb had mentioned mice. He was troubled very much with field mice, and he got over the difficulty in a very simple way. He put a little brass nail at each side of the entrance, and a brass wire across about ¼ in. high, so that the mice cannot get in. He cleaned celluloid with petrol, as it would take off all the wax and other impurities, making it clear enough to read a paper through.

Mr. W. Sole said he had been visiting a man who wintered some 250 colonies. At the beginning of August he had 500, which he kept partly on the old system, and partly in frame-hives. He (Mr. Sole) the previous day had seen this bee-keeper's system of open-air feeding. Every morning about nine o'clock the combs that had been extracted the previous day were put out, and the bees came there like a swarm; and his neighbours' bees joined in too. What he noticed was that there seemed to be no robbing from this outdoor method of feeding.

Mr. G. Rogers said it was generally admitted that bees were the best packing. He had used cork-dust for many years, and he never remembered being troubled with condensation. He put carpet on the top of that, but the quilt was well filled with cork-dust, and could be removed, if necessary, for feeding in spring. It keeps the bees warm and it is a good non-conductor.

Mr. White said his experience had been that if the stock was fed up early it would gather a quantity of pollen, and his colonies were at that time gathering pollen in great quantities. He had no trouble in the spring with pollen, but he had always found that the stocks fed up early always came out best. Mouldy combs were caused by late feeding, as the bees were unable to seal over the stores, and these caused a moisture in the hive. He also thought a low stand contributed to the dampness. With reference to quilts, he preferred porous coverings. During the summer months, with American oil-cloth quilts, he had found that the moisture condensed on the top and ran down. As extra packing for the winter he had found an excellent material in the packing that was used in making cheap eiderdown quilts. It was called capon, was very light, and cost about 8d. per lb. A couple of pounds would fill a sack about 2 ft. by 5 ft. Put on top of the quilts, he had found it excellent in all ways.

Mr. A. Stapley said this was his first visit to a B.B.K.A. meeting, and he confessed at once that he had enjoyed it very much. Most of his bees were kept in outapiaries miles away from home. Since

he had taken off the honey he had adopted the principle advocated by Mr. Herrod, and carted out jam-jars holding 3 lb. of syrup each, and all his hives had to feed at the beginning, whether they want to or not. After a few weeks he visited them, and if the jar was empty he refilled it. Then he looked for the reason why, and on examination perhaps he found that the stock wanted two or three more jars of syrup. When that had been going on for a few weeks—and he judged it would be finished in about ten days from then—he expected his bees to turn out next spring as they have always turned out in the past—fairly well; some better, some worse, but he had never found an absence of pollen. He found a cushion made of newspapers a very useful covering. For keeping the roof on, he bored two holes in the roof (because, living miles away, he might not see the hives for two or three months), then inserted a 3-in. nail, and the roofs are never blown off; there are no wet quilts or perished bees in consequence. Near his home he kept some sixteen or seventeen hives, which were about 4 yards from his honey-extracting room, and he never had any fear of these bees robbing by feeding from the wet combs in a somewhat similar manner to that described by Mr. Sole. He piled up the wet combs on the top of each other in the honey-room, and when he had finished extracting the honey he simply opened the door and let the bees go in and help themselves. His neighbours' bees certainly went in, too, but one must not be selfish. The main point is, if you expose wet combs never move them from the place where you first put them; but if necessary to do anything to them, put them back in the same place, and the bees will always come to the same spot, and in many cases never attack the hives in the neighbourhood. When the combs are clean the bees leave them, and they are ready for packing up next spring.

Mr. G. Franklin was pleased to hear Mr. Lamb say there should be plenty of food in the hive, and that there should always be pollen for the bees' use in winter. As this seems to have been challenged by some speakers, he thought it was his duty to support Mr. Lamb in that matter. One of the chief objects in wintering bees was to prevent that condition arising in the spring which is known as spring dwindling. There was no fear of this if bees had plenty of pollen as well as other food in winter. Like some speakers, he used to think that his combs were full of pollen, and removed some of them. One year he gave a friend of his who had some very late driven bees half a dozen pollen-clogged combs, which his friend gave to his bees, and he never saw a colony of driven bees come out so well as these did the following spring. He learned the lesson that one of the requirements for successful wintering was an abundance of pollen in the hive, so that the bees can commence breeding early in the spring, before there is the possibility of their getting out to get pollen, and it is that early breeding from the pollen stored in the hive that keeps the colony going when the old bees fly away in February.

Mr. Cowan, in closing the discussion, said that it had been an interesting one, and a good deal might be learned from it. One of the principal things in wintering was to have plenty of bees, as that helped very much in getting over the difficulty of damp and mouldy combs. Mouldy combs generally proceeded from there not being sufficient bees to cover the pollen that was contained in the cells. In some cases that did not signify much, but if one was living in a damp climate, as he was, it was of great importance, and he took care in the autumn to see that there were plenty of bees to cover all the combs, and any that could not be crowded by bees were removed. He usually removed several combs containing pollen, which were very useful in the spring. If kept in a dry place and a little fine sugar was powdered over the pollen, it would preserve these combs free from mould until the spring. In winter he always gave his bees plenty of room underneath the frames, and he raised the hive about 3 in. For coverings, he removed the old calico quilt that was propolised, and placed a fresh piece of calico, which would be porous, over the frames. Over the calico he put three or four layers of felt, but it did not matter how many more layers were laid on so long as there were not less than three. With a porous calico quilt on top there was plenty of ventilation with four, five, or even six thicknesses of felt. Entrances were reduced in the autumn, and opened after the bees had ceased flying to their full width—generally about 8 in.—in order to give them plenty of ventilation. He wanted to emphasise the fact that pollen was absolutely necessary for the bees for wintering, for with it they were able to begin breeding early in the spring. They cannot begin breeding until there is pollen coming in, unless there was some in the hive. Of course, we know that at that time a great many bees may be gathering nectar, and these get a certain quantity of pollen with that nectar which keeps them going. But when they are being fed with syrup they do not get any pollen, and unless it is given them they do not get sufficient food either for themselves or the brood. Allusion had been made to requeening in the autumn. Of course, queens are much cheaper at this time, and

if it is necessary to re-queen the colonies it is a good time of the year to do it. He could not quite agree with the speakers who advocated wholesale feeding. It was all right if you did not mind feeding your neighbour's bees and did not mind over-feeding some of your own, because it should be borne in mind that when you are feeding wholesale the strongest colonies will collect the most, and they will probably be filling their combs with food while the weaker ones will not be getting sufficient. He would always prefer to feed each colony according to its requirements. When he transferred his colonies to clean hives he could see which colony required feeding. This year he had not had to feed any, so that had he resorted to wholesale feeding they would have been over-fed. The method of wholesale feeding referred to was all right when one has a very large apiary, and where the bee-keeper has not got the time to look after every hive and there are no neighbours close by who keep bees. In America, in isolated apiaries, this is resorted to very frequently. Lately there have been experiments tried on the Continent of inducing certain colonies of bees to come for feeding at a certain distance from the apiary. A number of bees from the colonies that require feeding are carried to a spot some distance from their hives and there released. It has been found that the bees from these colonies will gradually learn to come to and fro and collect stores, while the other hives do not know where to go. In that way one can get certain colonies to feed. In so far as it has been tried reports seem to show that it had been successful. He thanked Mr. Lamb for introducing the subject, which had resulted in such an interesting and profitable discussion, and he would ask him to reply to any questions that had been raised in regard to what he had said.

Mr. Lamb said his first duty was to thank very sincerely those who had offered any advice or criticism, but he must distinctly say that he did not set himself the task of writing an exhaustive paper on wintering bees. If they would remember, he had asked experienced bee-keepers present to use the headings of his paper as pegs upon which they might hang useful hints for the benefit of all. Having kept bees himself for only fifteen years, he should feel it impertinence to try to teach those who had been keeping bees for twenty, thirty, and forty years; and as several of these veteran bee-keepers had favoured them with their views, he was personally very much obliged to them.

The point most referred to in the criticisms was the giving of pollen in autumn. He did try to make clear the fact that pollen is only to be given when there is not enough of it in the hive and when the bees have not the chance of gathering any. As they had heard from Mr. Cowan, you cannot have healthy brood raised unless there is pollen in the hive. If in going through the hives for the final examination they found an absence of pollen, he still suggested that they should mix some pea-flour with honey and plaster it into the cells of a corner of a comb. Breeding starts very early in the year, and he had known cases in which there had been eggs in the hive within a fortnight after Christmas. As he had said, there must be pollen in the hive if they were to have properly-raised brood: if there is no pollen there, they must give it; and if there is sufficient pollen, then there is no need to supply pea-flour. With regard to the speaker who said he had plenty of pollen-clogged combs, why did he not advertise them in the B.B.J., since many persons might be pleased to buy them? He would very briefly touch upon the other points of criticism. One speaker asked, "Would you recommend 30 lb. of stores for 4 lb. of bees?" This speaker unconsciously combined two separate points. He (Mr. Lamb) said, "You should not winter less than 4 lb. or 5 lb. of bees"; then as a distinct point he stated that for an average colony there should be from 25 lb. to 30 lb. of stores. It should be recollected that, owing to mild autumns and winters, bees require candy early in February, if the proper amount of syrup has not been given in the autumn. Bees often die as a result of their strength. It is a curious thing, but if one has a strong colony which consumes all its stores when nectar is not available—say in February—and the bee-keeper does not supply food, the bees die simply because they are a strong colony, whereas a weak stock might have gone on to March or April. With regard to mouldy combs, he would suggest that one of these should be put into the middle of a strong colony in May or June, when in the course of a week the bees will clean all the mildew off, and the comb will be filled with eggs; but only one should be given at a time. With regard to Mr. Herrod's points, he did not attempt to deal with extraneous questions, such as re-queening, for one can often winter bees just as well with old queens. In regard to stimulative feeding, if they were all experienced bee-keepers they should see that the bees had enough food in the hives for winter. Last month a friend of his asked him to go over some seven or eight hives, when he found that the greatest quantity of food in any one hive was 3 lb. He impressed upon his friend that he should supply ample stores for each stock, yet even so late as that he proposed to stimulate the queens to lay. Personally, he believed in stimulative feeding when necessary; but

some stimulate to excess, with the result that most of the syrup given is consumed, so that there is not enough left for the winter. With regard to using blocks under the lugs of frames, Mr. Herrod does not approve of this, but personally he had found no ill-effects arising therefrom. Further, he gathered that Mr. Herrod did not approve of using discarded underwear as wraps. In his own apiary they were frequently used, and he found soft woollen underwear very useful indeed for placing over the calico sheet. Mr. Cowan had dealt with the question of open-air feeding. This is simply a matter of benevolence on the part of the bee-keeper—of willingness to feed other persons' bees: and, as he mentioned, the practice has been tried in America very successfully.

The Chairman (Mr. Cowan), in closing the discussion, said he was sure that they were all very much obliged to Mr. Lamb for his interesting paper, and he thanked all who had taken part in the discussion for contributing to make so enjoyable an evening.

Mr. Pearman said before they left he would like to bring one question before the meeting, and it was chiefly to the Council that he wished to speak. Might he ask the Council, as responsible for drawing up the schedule, if they would definitely say what a trophy of honey could consist of? He found it consisted of very little. You must have a few preserves, part of a chemist's shop, part of a confectioner's shop, and a bucket of water, and you get the first prize right away.

Mr. Cowan explained that the Council had nothing to do with drawing up the schedule of the Grocers' Show, but in the "Royal" Show schedule, for which they were responsible, it was clearly stated that it was to be honey—nothing but honey. Wax or confectionery would disqualify the exhibit. The glass columns in the exhibit he mentioned, containing coloured water, were used as supports to the glass shelves, and were evidently treated as such by the judges.

A vote of thanks to the Chairman brought the meeting to a close.

AMONG THE BEES.

BIBLE BEES AND HONEY.

By D. M. Macdonald, Banff.

A land so rich in aromatic and nectar-producing flowers and plants as Palestine might naturally be set down as a favoured bee-country, and an investigation into the works of both ancient and modern authorities convinces us that it was. The mind naturally reverts to the description of the Land of Canaan as a "land flowing with milk and honey." This graphic and laudatory metaphor occurs in Exodus iii. 8, iii. 17, xiii. 5, xxxiii. 3, in Numbers xiii. 27, Deuteronomy xxxvi. 9, Jeremiah xi. 5, xxxii. 22, and in Ezekiel xx. 6 and xx. 15, being found in all these ten instances in almost identical words. Associated as this rich land is in our minds with many pleasant fruits, such as figs, pomegranates, and grapes, we must realise that Nature favourably smiled on its pastures and woodlands, where all was so fair and lovely. The most delicately flavoured flowers, yielding the richest nectar, are plentiful, and thyme and orange honey can be produced in abundance at the present time just as in the past.

No wonder that the world's wisest man should advise his offspring to partake of this pleasant sweet: "My son, eat thou honey, because it is good, and the honeycomb which is sweet to the taste" (Proverbs xxiv. 13). In the same book Solomon again commends honey as a health-giving food, chap. xvi. 24: "Honey is sweet to the soul and health to the bones." Solomon, while advocating the healthfulness and goodness of honey, was aware of the evil of over-indulgence, for in Proverbs xxv. 16 we read: "Hast thou found honey? Eat so much as is sufficient for thee, lest thou be filled therewith and vomit it"; and he emphasises it by repeating in verse 27: "It is not good to eat much honey." Apparently in Solomon's time honey was partaken of in both the liquid and solid form, as we repeatedly have the two kinds differentiated; Canticles v. 1: "I have eaten my honeycomb with my honey"; and in Psalm xix. 10 we read "Sweeter also than honey and the honeycomb." Here the marginal reading is "dripping of the honeycomb," and the reading of the Scotch metrical Psalms conveys the same idea of "dropped" honey—"I have honey, honey from the comb that droppeth, sweeter far." The story of Jonathan's find of honey in the wood of Ephraim (1 Samuel xiv. 25 onward) is interesting, because it shows us that honey was so plentiful that it dropped to the ground from the trees, and also in that it shows the ancient belief in the strengthening power of this sweet nectar: "I did but eat a little of the honey, and my eyes were enlightened." If the soldiers had eaten freely, he avers, there would have been a much greater slaughter of the enemy. Of its strengthening properties we have further testimony in Matthew iii. 4 and Mark i. 6, where the Baptist is described as living on "locusts and wild honey." Samson's story of the honey found in the carcase of the lion confirms our belief in the healthfulness of honey; Judges xiv. 8: "There was a swarm of bees and honey in the carcase of the lion. He ate and gave also to his father and mother." The incident gave

rise to the first riddle (Judges xiv. 8): "What is sweeter than honey?" The sweetness of honey is highly commended; Psalm cxix. 103: "Sweeter than honey to my mouth." Apparently, too, they could test the quality in quite an expert way; Canticles iv. 11: "Thy lips drop as the honeycomb, and honey and milk are under thy tongue." One who judges honey will appreciate the full force of the last three words when he is testing two almost identical samples.

We read more than once of honey being sent as a propitiatory present. Jacob said to his sons as they were setting out on their fateful journey to Egypt, there to become known to the great man of the land: "Take down to the man as a present a little honey," amongst other tempting fruits of the land (Genesis xliii. 11). When the sick Jeroboam sent his wife *incognita* to the prophet Ahijah (1 Kings xiv. 3), he artfully advises her to take him a present: "Take with thee a cruse, or bottle, of honey"—another proof that they had honey in the liquid form. It is not likely that in these early times there was any definite system of apiculture; and, indeed, it may be more than guessed that a great deal of the honey spoken of was the produce of undomesticated, if not, indeed, of wild, bees. Virgil's "hollow oak" was a favourite home of the bees in olden times, and the "clefts of the rocks," so common in the dry and arid parts of Palestine, were, perhaps, the favourite hives. In Deuteronomy xxxii. 13 we read: "He made him to suck honey out of the rock: and in Psalm lxxxi. 16 there occurs "With honey out of the rock should I satisfy them." This "find" is said to be common even at the present time, as the wandering tribes of Bedouins, near the Red Sea, love to feast on these spoils. Hives of European patterns are common, and others are made of straw or wickerwork; but the ordinary natives still use the tube hive of primitive times. It is simply a common drain-pipe closed at the ends with mud, and with a small hole to allow ingress and egress for the bees. The common bee is *Apis fasciata*, and at times they are very vicious even now, as they seem to have been in the long-by past: "The Amorites chased you as bees do" (Deuteronomy i. 44); "They compassed me about like bees" (Psalm cxviii. 12); but they knew how to subdue them, and used smoke—a fact worth noting. Apparently honey formed an article of trade even then, as we read in Ezekiel xxvii. 17: "They traded in wheat and oil and honey"—i.e., exported it. For transport it appears to have been put up in earthenware "cruses" or bottles: "Take with thee a cruse of honey" (1 Kings xiv. 3).

Not content with eating honey in the comb and in the "dropped" or extracted form, these ancients knew how to mix it with both solids and liquids in an appetising form. The "cracknels" named in the last quoted verse were fine cakes, with honey as one of the ingredients, while the "wafers" were also a thin species of cake. In Exodus xvi. 31 manna is thus described: "The taste of it was like wafers made of honey." "Milk and honey" are closely associated, and so are "locusts and wild honey." The very last food Christ partook of on earth was "a piece of broiled fish and an honeycomb" (Luke xxiv. 42).

It will be seen throughout that less is said in the Scriptures of the bee than of its produce, and this would lead us to the conclusion that little was known of the anatomy or physiology of the insect itself. The ant is extolled in Proverbs vi. 8 for her wisdom and diligence, but in the Septuagint there is an addition to this verse in praise of the bee.

In Ecclesiasticus xi. 3 we read: "The bee is little, but her fruit is the chief of sweet things," which commendation all true bee-men will re-echo. A more ancient translation is even more expressive: "The bee is small among the fowles, yet doth its fruite passe in sweetnesse."

The above "study" is by no means an exhaustive one, but before dealing further with it, perhaps some readers may help me out by forwarding me further references which have been overlooked.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7953.] The close of the season has left a big job for most bee-keepers in the South of England in the matter of feeding up for the winter, and I hope for the sake of the bees that this very necessary item has not been neglected. I know how very easy it is to put off till to-morrow work we should do to-day, and this habit of procrastination, I fear, more often applies to things that we are not in the habit of doing regularly, such as feeding the bees. These busy, provident little creatures in most seasons, by dint of hard work, provide themselves with food throughout the year, and something over and above their requirements for their owner. Pigs and poultry require feeding two or three times every day, and are not forgotten one single meal; therefore I ap-

peal to readers not to let their bees starve. It is now late for syrup-feeding, but if they have not been attended to give them a few pounds of good thick syrup, made as the "Guide Book" directs. Give it warm, and wrap up the feeder with some soft, warm material; and then, after the syrup is taken down, put a large cake of soft candy over the feed-hole when packing for winter. My stocks are all fed up with syrup: winter passages made over the tops of frames; the hole in quilt covered with a small square of glass, ready for removal when I give the cake of candy; and the hive-covers, which require a coat of paint to keep out the rain, have been made watertight; all the oddments of wax are melted up; the unfinished sections put through the extractor; and the combs returned to the hives to be cleaned up. I always follow the plan of standing, say, fourteen extracted section-combs in each rack, with the centre clear. One of these racks is put on each hive, carefully wrapped up. I do this in the afternoon, and there is no fuss or commotion among the bees and no robbing. The bees reach the sections through the feed-hole, and generally every comb is cleaned out by the next morning. I prefer my method to those of others, who stack up a pile of supers in the apiary, and let the bees clear them out when and how they please. I have seen a big uproar among the bees in an apiary when this system has been in operation. Besides, every stock that gets a rack of sections to clear up gets a taste of honey in late September, and it may rouse up the dormant energies of the queen and start breeding.

September-raised bees are good for the following spring. Early feeding-up in the autumn, when required, also lays the foundation of next year's success by starting breeding, which enables the stocks to go into winter quarters with a goodly proportion of young bees.—W. Woodley, Beedon, Newbury.

THE "ISLE OF WIGHT DISEASE."

[7954.] A great deal has been written lately about the dreaded disease that played havoc with the bees in the Isle of Wight. I consider this malady more deadly than any other bee-disease for this reason, in dull weather half the bees may be dead before any sign of it can be noticed; therefore it differs greatly from any other complaint from which they suffer. Though no one has as yet found a cure, I think some of our practical and scientific men will (or at least I hope they will) find a remedy that will prevent it from spreading any farther and check its ravages. On September 18 one of my stocks (the strongest) seemed very peculiar. The alighting-board and the porch were covered with bees, while the next stock was flying, and, of course, I made a closer examination. The bees were in little groups, from a couple to a dozen in each, and were climbing up anything that they came in contact with, and, looking farther away, I noticed the ground was covered with bees crawling in all directions. The action of their legs was perfect, moving with rapid action. It is in the wings where the trouble is; it seems as though these are paralysed and unable to do the work that Nature provided them for.

I tried to cure this stock with disinfectants. I took a clean hive and thoroughly scrubbed it with carbolic acid. With the aid of my brother I moved the diseased stock about 6 yards, and after pouring some of the acid on the ground where the stock stood, put the clean hive in its place. I took out the frames and brushed off all the bees, so that only those flying could enter the hive. I thought this would prevent the disease going any farther, but, alas! next day the bees were all dead. I have another stock within 4 ft. of where this one stood, which I am going to try to stop from contracting the disease. In this district about 75 per cent. of the stocks have died since the summer of 1909. I do not say they all died of the "Isle of Wight disease," but I know a great percentage have done so. I hope I am not encroaching on your space, but in conclusion I earnestly ask the Isle of Wight bee-keepers or anyone who has had experience with this disease to write of it, as each one may notice something different, and, putting all together, we may then come to some conclusion as to taking steps to prevent it.—W. H., Windlesham.

TROUBLE WITH DEALERS IN BEES.

[7955.] I regret to say that I have received the same treatment as your correspondent "G. W., Starbeck" (page 421, 7942), perhaps through the same advertiser.

On the 10th ult. I ordered 4 lb. of driven bees through an advertisement which stated not less than 4 lb. would be sent. When I received the bees they seemed such a small cluster in the box that I took the trouble to weigh them, with the result that they barely weighed 2 lb., after allowing for the box. I have written to the advertiser twice about it, but have not had any reply. However, I do not intend to allow the matter to drop, as I do not like being what is called "rushed," and thought it as well to write this to warn your numerous readers to be careful with whom they have dealings.—Disgusted, Olton.

[We have received letters on the above subject from "A. J. T.," "W. R. Mosby," and "W. H. Williams," all of whom

write in a similar strain; and from "W. D. S.," who champions the cause of the dealers. While we do all in our power to ensure that only reputable firms advertise in our papers, we cannot guarantee the *bona fides* of all advertisers, and it is therefore safest to use the deposit system. Buyers should remember, however, that swarms and driven bees lose weight in travelling.—ED.]

BEE-KEEPING EXAMINATIONS.

[7956.] Your correspondent "H. R., Lancs" (7951, page 429), is in the same position as myself. It is my intention to try to obtain a certificate, but I have had no practice in driving bees out of skeps, as there are none kept here that I am aware of. As the practice of keeping bees in straw skeps is rapidly dying out, the would-be candidate must either forgo the privilege of obtaining a certificate or set up a skep of bees, which is out-of-date and which cannot be examined except in a very inadequate manner, just for the sake of learning how to drive the bees from the skep. Yet the candidate may be proficient in all other matters.

Being a novice at bee-keeping, though I have read a good deal about it, I should like to ask three questions. 1. What advantage do we gain by sticking to this antiquated method of keeping bees when some of the older and more experienced bee-keepers would like to see a clause inserted in the proposed Foul Brood Bill making it illegal to keep bees in any fixed-comb receptacle? 2. Is there anything about keeping bees in the skeps beneficial to bee-keeping? 3. Is the bar-frame hive deficient in any way that we still have to manipulate skeps to obtain the coveted certificate?—A. H. HANSON, Derbyshire.

BEE-PEST LEGISLATION.

THE QUESTION OF COMPENSATION.

[7957.] In last week's issue of B.B.J. (7944) Australia was mentioned as the colony in which all fixed-comb habitations for bees are illegal. This was an error. I should have written New Zealand.—H. J. O. WALKER (Lieut.-Colonel).

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Coddled Bees (page 386).—There appears to be some slight conflict of opinion between Mr. Salmon and Mr. J. Bee Mason. Yet probably they would agree very well in practice. Mr. Salmon's injunction to care for the bees is the soundest of sound counsel. After all, the great thing in wintering is to get them through the winter, with care if necessary. After that, if the stock prove weakly, it should be re-queened from vigorous stock. And Mr. Mason is no doubt right when he says there is far too much coddling done. Strong colonies are regularly robbed to help wrecklings to store a surplus, in spite of repeated failure. And this sort of thing is taught in books written by practical men. It would be better practice to assert the process of survival of the fittest, for I doubt if it pays to tinker with weaklings. I would see that they were well stored, requeen them, and allow them to work out their own salvation, perhaps using them as a base for a super of brood when making artificial swarms, or breaking them up into nuclei. But as for bolstering them up with good bees and brood, I would as soon "put new wine into old skins." Mr. Mason is, however, not entirely a convert to his own theory, or at least he has not entered the bigoted stage. For he has transferred the wild colonies to modern hives, there to take their luck, whereas to obtain the best results he should have apiarised the old trees, the house roofs, and the cavity walls. Then he would indeed have had a unique bee-garden! Presumably he carries out his Spartan theories by denying quilts to these weather-hardened workers, and no doubt provides the hives with a tin funnel to conduct the winds of winter well into the heart of the cluster!

The Best Bees (page 390).—Dr. Miller is here quoted as saying that black bees are more vigorous than Italians in Switzerland, whilst Italians surpass them in America. I wonder what he means to imply by that. Does he mean that locality is responsible, just as it seems to affect the immigrant Irishman? Or may we take it that culture is responsible for the respective results? I wonder how Swiss bees would compare with the American-Italians on American soil. I have no hesitation in predicting that a trial in Switzerland would result in a verdict in favour of their own bees. And I doubt if selection has been undertaken, in America or anywhere else, on anything like the same united and systematic scale as at the Swiss experimental stations.

What is Heather-honey? (page 395).—Just at first sight this seems to us heather-men a strange question to put in the pages of the B.B.J. But London is a big place, and it may well be that Eric Lingmoor does not there cut such a figure as in his own village. Few of the Southern bee-keepers, not all, if I may say so with respect, even of the Southern honey-judges, seem to be well acquainted with the real thing. Recently, in the *Record*, Mr. Woodley expressed surprise that the heather should be in bloom in late June or July, I think. And I remember thinking at the time that he must have identified the bell-heather as the later blooming variety. So, at the

risk of redundancy, may I emphasise that there is no comparison between the honey of the ling and that of the other heaths? The latter can be extracted with the freedom of clover-honey; better, in fact, as it is much thinner—almost like water—even after sealing. It soon granulates, however, but is, I think, of a coarser and duller character than ling-honey. Years ago I gave a helping hand to Mr. Lancelot Quayle, whose surplus is largely helped by this honey, and I was surprised to see the ease with which it left the comb. That simple process cannot be applied to ling-honey. I have just finished pressing the unfinished sections—alas! too large a proportion—obtained at the moor this autumn, and I am almost loth to despatch to its destination this incomparable honey!

Terminological "Inaccuracies" (page 380).—My confidence in Mr. Smallwood has been rudely shaken by his "inexactitudes." He refers me to page 349 for "wit and wisdom," or would have done so but for an unfortunate printer's error, which rendered "wit" as "toil." I am glad to be able to make the correction, but I am not so sure but that the printer has the right of it! However, I have duly referred, and failed to find either! But how does Mr. Smallwood know that, mechanically speaking, thin jokes do not stretch to the vanishing-point? Clearly he must be able to follow them to their untimely end. What eyesight the man must have! At any rate, it is then too bad to expect a struggling humorist to explain his own jokes, however willing he may be to humour the thick- or thin-skinned, for he may be unable to see them himself upon a second look! Which would be like an attempt to "spot the lady" once more when she had flown from the frame.

But, seriously, I do not know which of the Muses encouraged painting, hence my question. And lexicographers' generalities leave me still in doubt. For each Muse had her separate duty—no doubt according to her taste—and the palatable art of painting does not seem to have been allotted. So perforce I must create Anna, or another, for Mr. Smallwood's benefit. But I am glad that Mr. Smallwood finds the Ana-chronicles "amusing," for they were writ upon the page of history *seulement pour sa muse!*

Queries and Replies.

[4054.] *Preparing Bees for Winter.*—1. I am afraid my bees have not sufficient honey for the winter. Is it now too late to give them more syrup? 2. Is it advisable, when covering them up for winter, to give them some candy, so as not to disturb them during the cold months? 3. I have difficulty in making the candy; it always becomes too hard. Can you explain why? Should pea-flour be mixed with it or not? If flour is used, should it be put in at first, or after the sugar is boiled? 4. I notice to-day (October 22) the bees are quite active, and seem to be working hard, bringing in pollen. There is much ivy close to my apiary which is now in flower on which the bees are at work. Do they get pollen or honey from it? Is there any other plant now blooming from which they can get honey, as I extracted two frames at the end of September taken from the body-box of the hive, and returned the empty combs? On looking at these to-day I see the bees have filled and sealed them again, though this particular hive has not had any syrup. 5. Should I put naphthaline in the hives when packing them up for the winter? Some of the stocks are in skeps. Can I place naphthaline on the floorboard of these? Thanking you in anticipation of answers. — AMATEUR, Northants.

REPLY.—1. It is now too late for syrup-feeding. Give a liberal supply of candy, renewing it when required, and see that the supply does not fail. 2. You must look from time to time during the winter. Choose a fine, warm day. 3. If you follow the recipe given in "Guide Book" carefully it should be all right. You evidently boil it too much. Pea-flour should not be used till February. It should be shredded in while the candy is cooling. 4. Honey is obtained from ivy, and no doubt that is the source from which the bees have obtained the stores. 5. Yes, place two balls split in half in each brood-chamber; also on floorboard of skeps.

Bee-Show to Come.

November 9 and 10, at St. Albans.—Honey Show, under the direction of the St. Albans and District Bee-keepers' Association, will be held in the Drill Hall. Open classes, Best 1 lb. Jar of Extracted Honey and Best 1 lb. Section (entry free). Schedules from E. Watson, Holywell Hill, St Albans.

Notices to Correspondents.

T. A. J. (Flintshire).—*Making Soft Bee-candy.*—As you have found the old recipe more successful, we give the particulars as follow: In making, get a brass or an enamelled-iron pan, and into this put 1 pint of water; allow it to boil, then gradually stir in 6 lb. of loaf or refined crystallised cane sugar. Set the pan beside the fire (not on it) and, as the sugar gradually melts, give an occasional stir until it is quite dissolved. Then add ½ teaspoonful of cream of

tartar and place the pan on a brisk fire; stir without stopping until the mass begins to boil. Withdraw the pan a little from the fire, and let the mixture boil for half a minute or so, then with a spoon drop a small quantity on a plate. If the sugar does not stick to the finger when pressed into it and withdrawn, it is boiled enough, but if sticky it must be boiled another minute to evaporate the excess of moisture. When the proper condition is reached remove the pan from the fire (if to be medicated the naphthol beta should be added now); then, without loss of time, place the pan in a large vessel of cold water—a running stream is still better, if available, as hastening the cooling process; stir without ceasing until the mixture stiffens and begins to turn white, like thick paste. Then, before it gets too stiff to run freely, pour into suitable moulds, prepared beforehand, or into shallow dishes, lined with paper for easy removal and to prevent the candy from sticking to quilts. A handy mould for bee-candy can be formed from a wood section-holder (made like an ordinary folding section), grooved for glass on both sides. Only one glass is, of course, used, directly on to which the candy is poured and allowed to stiffen. The glass allows the bee-keeper to see when the supply needs renewing. Well-made candy, though so soft as to be easily cut with a knife, sets firm and stiff with a smooth grain, like the fondant sugars made by confectioners. It does not become stone-hard, but may be easily scraped into a soft buttery consistency with the finger-nail. In this condition the bees can take it readily. Great care must be taken in making candy, by constant stirring, to prevent the sugar from being burnt, as in this condition it is injurious to bees if they are fed with it in cold weather.

G. W. Mackie.—*Beeswax.*—No. 5 is the best wax of the six samples.

C. H. Ridding (Newtown).—"*How to Make an Extractor.*"—This pamphlet has been out of print for some years.

Radnorian.—*Candy-making.*—The candy is much too hard for bee-food. You have over-boiled it. See reply to "Amateur" (Northants), page 441.

C. R. (Bucks).—*Analysis of Honey.*—Nos. 1 and 3 contain chiefly pollen of *Leguminosæ*, but there are a few grains of cucumber and tulip-tree in both. All these may be found in English honey, and there are no characteristic grains that would enable one to pronounce it as foreign with certainty. No. 2 was smashed, and all the honey had run out in the package.

T. E. S. (Yorks).—*Bee-books.*—The book "How to Keep Bees" is also an American book. Have you "The Honey-bee" and Cheshire's "Bees and Bee-keeping" (vol. 1, Scientific)?

F. H. (Barnsley).—*Variety of Bees.*—The bees sent are ordinary English natives.

J. D. P. (Isle of Man).—*British Columbia for Bees.*—1. Wait until colder weather sets in, then put on more candy. 2. British Columbia is a good place for bee-keepers, but it is advisable before locating an apiary in any place to visit the district, if possible, and note the quantity and quality of bee-forage before deciding. Perhaps the *Canadian B.J.* editor will help you with advice on this point. Write him c/o Hurley Printing Co., Brantford, Ontario, Canada.

Mac (Bridge of Allan).—*Dead Queen.*—We are sorry, but as the matter had been dealt with the queen was thrown away, and therefore further examination is impossible.

Honey Samples.

M. M. W.—So far as we can tell from the limited supply at our disposal it is a heather mixture.

M. H. (Northolt).—Flavour fair, consistency thin, colour medium; from mixed sources.

C. H. (Haslemere).—Honey is not properly ripened, and shows signs of fermentation; this accounts for the acid taste.

T. G. B. (Greenwich).—A very poor sample, which, we should say, is of the foreign variety.

T. P. (Ammanford).—No. 1, a very poor sample, which is fermenting. No. 2, a nice sample of granulated honey, rather rough in grain, but fair in flavour.

Suspected Disease.

J. W. G. (Stroud).—The comb is badly mildewed, and has evidently been in a very damp situation. It contains a number of dead larvæ which succumbed some time ago. There are also distinct traces of foul brood, and if all the combs are similar to the one sent, destroy at once and disinfect the hive.

C. V. K. (Godalming).—The bees are suffering from "Isle of Wight disease," and as no remedy has yet been discovered, we can only advise you to destroy them.

R. C. (Exminster).—Comb is affected with foul brood in advanced stage. Your best plan is to destroy the bees and the whole internal parts of the hive, and disinfect it thoroughly. If you prefer to give the stock a chance of coming through the winter, use "Apicure" in the hive, and write us again later.

Dulwich.—There is no sign of foul brood in the comb.

Editorial, Notices, &c.

AYRSHIRE AGRICULTURAL SHOW.

HONEY DEPARTMENT.

The Ayrshire Agricultural Society held their annual exhibition of dairy produce, &c., at Kilmarnock on the 21st and 22nd ult. The honey section was a great improvement on last year, the exhibits being of excellent quality and entries more numerous.

Extracted honey showed fine flavour, consistency, and colour, and was got up in attractive marketable form; while in the section class the sealing was unusually good, and flavour and consistency left little to be desired. Heather-honey had apparently suffered a little through a not too favourable season. The Rev. R. McClelland acted as judge, and made the following awards:

Six 1-*lb. Jars of Extracted Honey* (20 entries).—1st, A. White, Lyndhurst, Old Cumnock; 2nd, Peter M'Donald, Car Road, Cumnock; 3rd, James Smith, Netherholm, Dumfries; v.h.c., John M. Stewart, Mollance Gardens, Castle-Douglas; h.c., John Henderson, Car Road, Cumnock.

Six 1-*lb. Jars of Heather or Heather-blend Honey* (11 entries).—1st, A. White; 2nd, James Pearman, Penny Long Lane, Derby; 3rd, Peter M'Donald.

Six 1-*lb. Sections* (8 entries).—1st, Joseph G. Nicholson, Langwathby, Cumberland; 2nd, John Nisbet, Stockiehill, Old Cumnock; 3rd, James Smith; v.h.c., Jas. Pearman; h.c., John Muir, Burnfoot, Kirkcudbright; c., John Ross, Barkerland, Dumfries.

Six 1-*lb. Heather Sections* (8 entries).—1st, John Henderson; 2nd, Peter M'Donald; 3rd, Alex. F. Borland, The Knowe, Cumnock; v.h.c., Joseph G. Nicholson; h.c., A. White; c., Percy M. Ralph, Settle, Yorks.

Six 1-*lb. Jars of Granulated Honey* (6 entries).—1st, Percy M. Ralph; 2nd, John Ross; 3rd, F. W. Frusher, Crowland, Lincs; v.h.c., Robert Steven, jun., Irvine Road, Kilmaurs; James Pearman; h.c., Mrs. A. Turner, Amersham, Bucks.

Beeswax (9 entries).—1st, John Rowlands, Pwllheli, North Wales; 2nd, Mrs. Blackstock, Flatts of Cargen, Dumfries; 3rd, James Smith; v.h.c., John Ross; h.c., John M. Stewart; c., Goodburn Bros., Millfields, Peterborough.

Three 1-*lb. Jars Extracted Honey* (exhibitors resident in Ayrshire) (9 entries).—1st, Alex. F. Borland; 2nd, A. White; 3rd, John Henderson; v.h.c., Matthew Kerr, Kirkland Row, Springside; h.c., David Briggs, John Knox Street, Maybole; c., Hugh M'Quiston, Dankeith Dairy, Kilmarnock.

Three 1-*lb. Sections* (exhibitors resident in Ayrshire) (5 entries).—1st, A. White; 2nd, Hugh M'Quiston; 3rd, John Henderson; v.h.c., Alex. F. Borland.

Two 1-*lb. Jars Extracted Honey* (16 entries).—1st, A. White; 2nd, Alex. F. Borland; 3rd, John Henderson; v.h.c., Peter M'Donald; Q. Aird, Schoolhouse, Howwood; h.c., John Harkness, Newfield Burn, by Annan.

Two 1-*lb. Sections* (11 entries).—1st, John Ross; 2nd, John Muir; 3rd, James Cruickshank, Gordon, Berwickshire; h.c., John Harkness, John Nisbet, and James Smith.—(*Communicated.*)

SOME TRICKS OF THE TRADE IN UNITING.

We are frequently asked to advise readers how best to unite colonies. There are many ways of doing it described in these pages, but an editorial by Mr. E. R. Root in *Gleanings* struck us as containing several new points, and, thinking it may be useful to some of our readers, we make no apology for reproducing it, especially as it describes results obtained in working a commercial apiary:

Now is the best time of the year to do general uniting for winter. A morning should be selected when it is cool, or cold, when the bees are not flying; say a temperature of 50 deg. or 60 deg. If the two colonies to be united are contiguous, that is, stand side by side, remove one of the hives and put the other one half-way between the places where the others stood. Then pick out the best frames of the two brood-nests with the bees and put them into the one. As a matter of precaution, do not mix the combs of the two lots, but put one set on one side and one set on the other side of the brood-nest. Close the hive up. If there is no difference, pay no attention to the queens. If one queen is superior to the other, kill the inferior one and allow the other to remain. It is not very difficult to introduce a queen out of the same yard—in fact, any fresh queen that has not had a long journey through the mails. In most cases the queen of one lot of bees will be accepted by the bees of the other set of combs.

But in a case where the two weak colonies are separated, one in one portion of the yard and the other in another, we would advise moving the weaker of the two, which has been made queenless, over to the stronger, and, while doing so, blow a little smoke into the entrance and jar the bees, giving them a general jouncing before uniting the two sets of combs into the one brood-nest. The other colony, or the one to receive the others, should be disturbed or smoked at the entrance. This is done to get the bees to fill up with honey. This work should be done in the

cool of the morning or the cool of the evening, when no bees are flying; and do not forget to jar the bees that are moved, and make them queenless two or three days in advance.

In the case of hybrids or blacks it may be necessary to use a little smoke after uniting, to keep them from fighting. A better way in the case of bad bees like Cyprians, in addition to smoking, is to sprinkle both lots with sweetened water. This will cause them to lick each other off; and during the process they will acquire the same scent.

It sometimes happens that one will have a lot of weak nuclei in the yard. It may take a dozen of them to make one good colony. We would advise shaking the bees of these, if queenless, all into a wire-cloth box until you have something like five or six quarts of bees. Give them a general jouncing; then in the cool of the morning, or, better, in the cool of the evening, take up a dipperful of bees and dump them in front of the entrance of any colonies that may need a little strengthening. If one colony requires two dipperfuls, give it the amount required, and so on scatter the bees among the hives that can stand or need a few more bees. There will be no trouble, if in the cool of the morning or evening, about these bees uniting or about their attacking the queen.

Do not make the mistake of trying to unite when the bees are flying. After they once get out in the air, when they find their hive gone, they will, of course, go back to the old stand. Remember to do all the uniting in a cool atmosphere. Very few bees will return to the old stand if, during the move from the old stand to the new, the hive is pretty well bumped around. Right here score a point in favour of "Hoffman" frames or any good self-spacing frames.

If one does not have "Hoffman" frames, let him shake the bees off in front of the entrance of the other hive—that is, the hive that is to receive the two lots of bees—and allow them to run in. The point is that, in order to make bees stay in the new location, they should be "shook up" or disturbed. Right here the principle of "shook" swarming, that has been advocated so much of late, comes in, for shook swarming is nothing more nor less than natural swarming induced artificially.

For some of these tricks of the trade we are indebted to our apiarist, Mr. J. W. Bain. In this connection Mr. Bain says there is no use in trying to unite *old* bees, as they probably will not stay. Moreover, he says they would be of no use to any colony, as they would only be consumers, and would die off long before spring. This dovetails very nicely with the teachings of the late Henry Alley.

In the fall of the year it is sometimes advisable to change the position of some of the hives, which, from the experience of the winter before, are found to be too much exposed to the wind; or, occasionally, the owner wishes to move the hives close together for the purpose of packing under a temporary shed, &c. There is often considerable loss when this is done, owing to the fact that the bees return in large numbers to the old stand; and, even though there be no hive there, they collect in bunches, and finally perish or wander all around, only to get lost. This loss may be partially prevented, if not wholly; but the moving must be done in the right way.

Very early in the morning of a warm fall day, before the bees have started to fly, is an ideal time for this work. Simply give the bees of the colony that is to be moved a good smoking at the entrance to keep them in while the hive is being carried, and then move the hive to its new position. When all are moved, and just before the bees would ordinarily start flying, blow in considerable smoke at the entrance of each hive moved, and pound vigorously on the sides with a stick. This will cause the bees to fill up; and when they come out to fly they will mark their location so that few return to the place previously occupied.

If there are too many to move before the bees would be flying in the morning, some may be moved the night before; but all moved colonies must be vigorously smoked and roughly handled by means of pounding, &c., just before they go out to fly. It is much better to do all the moving at one time, however. We recently shifted about twenty colonies in chaff hives to a new location in the same yard, and, by following this plan, had no loss.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

Through the kindness of the Editor I am able to give the result of my three years' study of this subject for the benefit of the readers of the BEE JOURNAL.

Probably many have felt the need of some work of reference for helping them to diagnose the source of the various honeys, for I know of none that treats of the subject especially as it concerns bee-keepers.

Up to now I have been working more particularly on British nectar-producing plants, but hope to continue my investigations with those of countries from which we import most of the foreign honey, so that we may have, as far as possible, a complete record for the diagnosis of any honey put before us.

Honey always contains more or less pollen, which is accidental to it, being taken up by the bee with the nectar from the corolla of the flower, or in various other ways getting mixed with it, often to such an extent as to colour the honey by its presence, and it is by these grains that with the aid of the microscope we are enabled to trace the source of the honey.

Before we can do this we must know not only its colour, but also its form in each particular flower. Furthermore, we must know what changes in form the pollen-grains assume in different media, especially in the stomach of the bee and in honey.

With this object in view I have carried out my investigations, and give the results as complete as I have been able to make them up to the present, knowing full well that the subject is not exhausted, but that there is room for still further research.

To make it more interesting, I intend to give a short description of each plant, mentioning its chief characteristics. Some may think this unnecessary, but I think it is, for I know people—many of them very intelligent—who have kept bees for years, but who do not even know the *chief* nectar-producing plants. For instance, very few in the Midlands and Northern counties know sainfoin, whilst others in the South do not know the heathers; and the same may be said of many of the less important flowers, so that I should feel that I had left out an important part if this were omitted. I trust that those who *think* they know them all may still find some that they have overlooked, and feel when they meet with a new one—as has frequently happened with me—that they have come across a new friend.

I also venture to hope that it may be the means of inducing some of our readers to look up new friends for themselves from among the flowers, which in turn will bring them happiness, as it has done to the writer of these lines; so that when they take a walk by the roadsides or streams, in the meadow or on the mountain, they will always see some familiar face smiling at them or giving them a friendly nod.

For those who have not studied botany it will be necessary to consider the office of the pollen-grain. In conjunction with the ovule, it is the *essence of the plant*, and without it seed could not be produced.

Pollen *is* necessary for the continuation of each species, and is most lavishly produced on that part of the flower called the anther (Fig. 1, *a*), from which it must be carried by some means (mostly by insects) to what is called the stigma (Fig. 1, *s*).

These two parts may be produced on the same flower, as in the apple blossom (Fig. 1), or on separate flowers, as in the hazel, or even on separate plants or trees, as in the willows.

The anthers vary in number, form, colour, and in the position they occupy on the flower, so that those not well-versed in botany, when they come across a fresh kind, have sometimes difficulty in finding them. As an instance in proof of this, I was once looking over a fig-tree in a friend's greenhouse, and on telling him that I was searching for a flower—but it was probably too late, as there was only fruit to be seen—he rather astonished me by saying that I should find the flower *inside the fruit*; and on cutting open a fig I found it to be true.

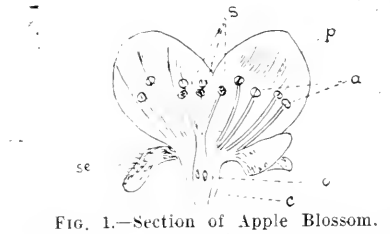


FIG. 1.—Section of Apple Blossom.
a, anther; *s*, stigma; *c*, calyx; *o*, ovary; *p*, petals; *se*, sepal.

The number of stamens bearing the anthers varies in different flowers, and as each anther may produce from 300 to 1,000 pollen-grains—and there may be some hundreds of anthers on a single head in such flowers as those of the order Compositæ, of which the dandelion is a type—it is seen in what profusion pollen may be produced. It is computed that one of the lowly flowers mentioned will give a quarter of a million grains, while the pæony gives three and a half millions. The firs are even more prolific, and give it off in copious showers, and the pollen-grains, having an air sac attached to each, are carried on the wind for many miles.

The stigma (Fig. 1, *s*), when ripe for receiving the pollen-grains, is coated with a sweet sticky fluid which it secretes, there being no pellicle to cover it, to which the pollen-grains adhere, and from which, at the same time, they receive the nourishment necessary for the growth of the pollen-tube, which penetrates with surprising rapidity through a channel in the style or centre part of the flower supporting the stigma (Fig. 1, *s*) into the cavity in the ovary (Fig. 1, *o*).

To examine a pollen-grain minutely we shall need some aid to our sight, and this must be a microscope with what is called a $\frac{1}{4}$-in. objective. This, with a No. 3 or "C" eyepiece, will magnify the grain to about 300 diameters, and this en-

largement, with few exceptions, is just what is needed. If our pollen-grain is from the bean and we are looking at one end of it, we shall see a spherical substance with three projections called processes. In other kinds we may find spines, reticulations, indentations, &c., upon the surface of the grain. If we cut such a grain of pollen through the middle—which may be done with a special instrument called a microtome—we shall find on referring to Fig. 2 that it is composed of an (*e*) outer (extine) and (*i*) inner (intine) pellicle, which surrounds a mass of protoplasm or (*f*) fovilla, and which, in conjunction with the ovum, imparts the characteristics of the plant on which it was produced.

When one of these pollen-grains is placed upon a ripe stigma, either by wind, insect, or other means, one of these processes grows into what is termed a pollen-tube. The intine bursts through the extine, and, unruptured itself, continues to elongate, passing right along the style until it reaches the ovum, into which it enters and empties its protoplasm, thus bringing about its fertilisation or pollination, and enabling the seed to develop.

As we go through our series it will be

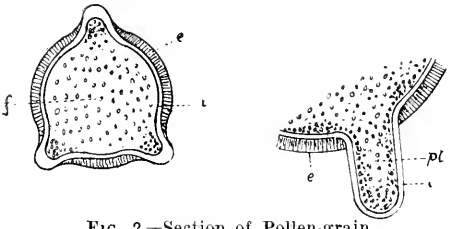


FIG. 2.—Section of Pollen-grain.
e, extine; *i*, intine; *f*, fovilla; *pt*, pollen-tube.

noticed what variety there is in both form and colour of the pollens, and, at the same time, how very much alike many of them are, especially in the dry state. It will also be seen that although some are constant in different media, others vary in form.

The size of the grains varies from $\frac{1}{200}$th to $\frac{1}{2000}$th part of an inch, and although we shall not reach those extremes in the flowers I propose to deal with, there will be a considerable variation in them. In the descriptions I shall always express the sizes in the thousandth parts of an inch.

With this introduction as to the need for, and operation of, pollen-grains, we will take into consideration each kind of pollen produced by those flowers which are of special interest and use to the bee-keeper. After going through the most important, I purpose giving particulars respecting the collection, fixing, mounting, staining, and photographing of the specimens.

(To be continued.)

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

EXPERIMENTS WITH BEES IN THE TRANSVAAL.

[7958.] I should like to know your conclusions on the following experiment which I attempted to carry out, but was baulked in the completion thereof by the intelligence of the bees.

Late in spring three years ago I shook a young queen of only three weeks' laying on to six frames of fully drawn-out drone-comb. Three frames of hatching brood and one of honey and pollen were added on the other side of a queen-excluder dummy which prevented the queen from getting round to this quarter of the hive. As often as was necessary fresh hatching brood or honey was added whilst the queen filled the drone-comb. Supplies were also brought in from the field during the season.

Any attempts made to pull down the drone-comb were frustrated by promptly inserting another fully drawn-out drone-comb frame in place of the mutilated cells. The hive was regularly inspected three times a week, but never were any eggs seen hatching in the six drone-frames save those which produced drones. The experiment was continued for four months, when the drone-combs were withdrawn and worker-comb added, so that when autumn was at hand the stock was storing, &c., for winter.

That season over, I waited until spring had advanced ere continuing the experiment. This time I inserted two frames of drone-comb (drawn-out) side by side in place of the outer combs, and confined the queen by the excluder to that side of the hive. As the workers hatched, the empty combs were transposed for drone-comb frames until the same state of affairs existed as in the previous year. Instead of now giving a plentiful supply of hatching worker-bees, an empty frame of worker-brood was placed next to the excluder-zinc on the side opposite to the drone-comb, and I watched for results.

It was soon seen that when I refrained from adding hatching bees, eggs were being deposited somewhat irregularly in the empty comb, and worker-bees resulted therefrom. All this time the drones were hatching merrily from the other side of the zinc. At first I deemed the brood the result of a fertile worker, but the hatching

bees proved my mistake. Only one attempt was made at swarming, but that was nipped in the bud by the knife.

At this time business called me some hundreds of miles away, and when I returned the hive was tenantless save for hatching drones and some old bees which crawled idly over the combs heedless of my examination. I was informed that on the morning of my return to town, about 10 a.m., with scarce a moment's warning the hive had swarmed directly into an empty hive I had had close by for a stray swarm and had taken possession thereof. My inspection of their new abode had to be deferred until next morning, when I found her majesty busy laying eggs, doing so even while I looked on. These eggs produced worker-bees.

Now for queries. Were the eggs carried through the excluder, eggs laid in drone-cells, and did the intelligence of the queen lead her to lay there eggs for conveyance into the worker-cells, or were these eggs laid elsewhere and not at all in the cells? Not a worker-bee was ever observed to have been hatched from the drone-cells during both seasons in which she was confined to the drone-comb side of the hive.

The experiment would have been repeated this year but for the fact that I am four miles away from my bees, and owing to incidence of work and its responsibilities I am unable to attend to them as often as I should like.

My idea is that if experiments are carried out on lines such as these (first "educate" the bees and queen to expect a constant supply of worker-brood and then withhold it, &c.), a better understanding may be arrived at at what parthenogenesis is. I am probably wrong, but I have a sort of feeling that the control of fertilisation of the egg by the queen herself is due not to intelligence, but to an automatic action which Nature has provided in her body, but which has not yet been discovered. How and when this automatic action or control is brought about is what must be ascertained.

My locality is very poor in pasturage for bees, and the only way to ensure a fair result is to have one's hives a week ahead of the season ere it commences. A boiling-over hive ensures thirty minutes' to an hour's earlier rising to fetch nectar, resulting in Mother Hubbard's cupboard to other folk's bees when they arise.

I have done a good deal of experimental work with my bees in a small way, having only ten hives, and not working for much surplus; but we in South Africa unfortunately have such a tremendous amount of spade-work to achieve that the industry, let alone the science, is still in its infancy.

"Results" is the cry of the South African bee-keeper, and the science is neglected. Nature has bountifully provided certain districts, such as the Natal seaboard and the heather districts of Cape Colony, particularly the Hopefield and Riversdale counties, with splendid pasturage for the bees, that methinks the least we can do in return is to study our local races and improve their strain, not by importation of foreigners, but by selection and cross-breeding.

The improvement aimed at by those who import foreign queens is to oust completely the South African queen and instal the oversea rival, a result not always successfully achieved. Several ardent apiarists have imported Italians with a view to getting a quieter race to handle, but my own belief is, after an experience with the hybrids and a little acquaintance with their habits and idiosynerasies (one of which was to clear out a poultry-yard in half an hour—a matter of sixty birds), that the ordinary native bee crossed with the old English black bee would result in better success.

My pen has run on, and I fear I have wearied you, but the subject is so fascinating that I regret my time cannot be spared to make still further experiments. However, as time goes on I hope to send you another account of what success I have had in queen selection, the experiments of which are still continuing.

Could you not persuade someone in England to carry out tests on similar lines? A friend of mine, who is also an ardent experimenter, worked out a similar test, but simply shook his swarm on to drawn-out drone-comb foundation. He never supplied hatching brood, and after eight weeks the swarm decamped—over the hills and far away. He contends that he confined the queen in the hive by means of excluder, but I am sure that the mass of drones caused the zinc to be displaced and enabled the queen to escape. The only drones which had a flight were those which escaped during the examination of the hive—and died. I cannot vouch for his facts, and cannot myself understand how the drones hatching freely after four weeks could live in the hive without desiring to escape. Food supplies were given through a feeder.

Wishing you still further success in apicultural science. — GEORGE S. OETTLE, Johannesburg.

[It is difficult to always give a reason for what bees do, and this is only another case showing that they do nothing invariably. Our own experience with queens confined on drone-comb has been that they can lay eggs which produce workers. We recollect seeing a colony having only drone-comb at Dr. Bianchetti's apiary in Ornavasso. In this case, when the swarm was first placed on the combs, the queen was for some time reluctant to lay, but at last gave in to the inevitable, and when

we inspected the hive she was laying eggs which produced only workers, and there were no drones present. It is also not at all improbable that eggs may have been transported, and we have known of several cases which lead us to suppose that this can be done. We hope the suggestion of our correspondent of trying such interesting experiments in this country may be carried out by some of our bee-keepers.—Ed.]

"ISLE OF WIGHT DISEASE" AND LEGISLATION.

[7959.] I have made exhaustive inquiries, and gather that the county expert was the first person to introduce "Isle of Wight disease" into the county in which I live, and has even now that disease in his apiary. Now, Sir, it has taken many, like myself, a lifetime to build up and maintain a healthy apiary, and why should such men be allowed to obtain legal powers and bring (as now) infection into our midst?

We old hands know how to manage our apiaries, and I (like others) will *not* allow foul brood to be in my apiary, but destroy a greater or less number of stocks yearly in order to keep free, as far as possible, from it. Why such as myself dread "expert" (?) inspection is because we do not want our healthy apiaries infected (as now happens) by such, too often, very inexperienced men.

If we must have legislation forced upon us, then I contend that all of us old hands who can pass a third-class expert examination ought to have our apiaries totally exempt from all legal inspection. An Act (if passed) ought to be against the careless and ignorant only.—Iceniland.

[It is hardly just to accuse an expert of bringing infection into the county. He may have the misfortune of having "Isle of Wight disease" in his apiary, but it does not follow that he introduced it. There are many apiaries which no expert has ever visited where the disease has broken out, even amongst old and experienced bee-keepers. There is, moreover, no evidence that this disease can be carried from one apiary to another in the way implied, and Dr. Malden states that in nearly every case in which accurate observations have been made it has been found that the disease was introduced into a healthy hive by foragers who had entered infected hives for the purpose of robbing. Old hands who do not allow foul brood to be in their apiaries will not require a visit from the inspector, and his work would be confined, as it is in other countries, to visiting and advising those who through ignorance do not understand how to keep down disease, or through obstinacy refuse to do so, and thus become a source of infection to the neighbourhood. Moreover, an Act would provide that the local authority should authorise a *qualified person* to exercise the powers conferred by the Act, and we presume those intended for inspectors would have to undergo proper tuition and satisfy the authority that they thoroughly understood dealing with infectious diseases. We do not expect that passing a third-class examination would of itself be sufficient to quality for an inspector, and that a much higher standard would be required. We quite agree that the Act should be "against the careless and ignorant," and it is just in order to deal with such cases that legislation is asked for.—Ed.]

BEE-KEEPING EXAMINATIONS.

[7960.] I am indeed pleased that one out of the estimated sixty thousand bee-keepers in this country has come forward in support of my letter in your issue of October 27.

A. H. Hanson (7956, page 440) reiterates my complaint that the Council of the B.B.K.A. does not act consistently in requiring proficiency in driving from candidates in the bee-keeping examinations, and states that he, as well as myself, is hindered in his enthusiasm for the craft by that requirement.

I had hoped to see in this week's number some expression of opinion on this point from a member of the Council, although I have a lurking suspicion, which I know is shared by other readers of your valued paper, that the members of the Council sometimes consider themselves to be, like the parson in his pulpit, 6 ft. above argument.

One can, of course, understand this attitude towards a confirmed skeppist obsessed with the obstinacy born of wilful ignorance; but can this charge be brought against any would-be candidate for an expert's certificate?

I hope that some of those who already hold the B.B.K.A. certificate, as well as some aspiring to that distinction, will enlarge the discussion on the subject which I have endeavoured to bring forward.—H. Reader.

[7961.] With reference to the correspondence on the above subject (pages 429 and 440), it seems to me your correspondents have lost sight of the fact that at the present time there are probably thousands of skeppists belonging to the old school who will not entertain modern ideas of bee-keeping, but who are notwithstanding quite ready to accept a small sum for their condemned bees, which would in the ordinary course be destroyed. To my mind, an "expert"

should be capable of performing *any* operation connected with bee-keeping, and therefore I consider the conditions of the third-class examination are justified.

A certificated expert who could not with ease perform driving operations would be held in poor esteem, and it would certainly not redound to the credit of the B.B.K.A. if their certificates of proficiency were obtainable without a good all-round practical knowledge on the part of the candidate.

If skep-hives were not in existence it would be a very different matter, but the fact remains that they are, consequently bee-driving has to be done. Then, again, experts are often called upon in the autumn to transfer bees from old boxes, pails, and such-like receptacles to frame-hives, and I fear a man without a certain amount of practical experience would land himself in difficulties in instances of this kind.—G. W. Judge, Dartford.

ENGLISH HEATHER-HONEY.

[7962.] In B.B.J. (page 395) there appeared a letter from me headed "What is Heather-honey?" In it I asked if ling produced nectar in the Midlands and South of England. If it did so, was such nectar different in flavour from that produced in Scotland and the North of England, and was the secretion of ling nectar influenced by altitude and latitude?

My question was occasioned by interest in the scientific problem of the influence of "locality" on nectar-secretion, and of ling nectar-secretion in particular. I have no axe to grind. I mentioned that I had never been fortunate enough to taste ling-honey from the Midlands or the South, and that a section labelled "Pure Derbyshire Heather-honey," bought at the "Royal" Show in 1908, was, so far as my recollection goes, identical with bell-heather honey.

Mr. J. Pearman in B.B.J. (page 430) states that this section was his. I had not known its parentage, and that I depreciated this honey of which he is justly proud. The section I referred to was a particularly perfect one, and the flavour of the honey excellent, but the flavour was that of bell-heather and not of ling. The explanation may be that the particular section I referred to was obtained when Mr. Pearman's bees first went to the moors, while bell-heather was still secreting and before ling began to secrete, and that the bulk of Mr. Pearman's honey is from the later source. The fact that Mr. Pearman has been so successful on the show-bench is no proof that his heather-honey was from ling, but rather the reverse, if he only shows and wins in classes for sections. The two are identical in appearance, and, as the Editor of the B.B.J. says on page 395, they are generally shown in the same class. At a meeting of the Northumberland and Durham bee-keepers, at their honey show on October 29 last, I handed round two apparently identical sections, one produced from bell-heather with a possible admixture of wild thyme, and the other from ling. None of the members were able to distinguish them from the colour and appearance only. The universal comment on the former when it was cut up and tasted was that it was an excellent flower-honey—one member thought it better than the best clover-honey—but all agreed that it had not the slightest resemblance to ling-honey.

Mr. Pearman points out how poorly Northern heather-honey exhibits figured at the Grocers' Exhibition when in competition with those from Derbyshire. If Derbyshire heather-honey is obtained from bell-heather I am not surprised at Derbyshire's success, as honey from the heaths has the advantage of being collected three or four weeks earlier in the year at a place further south, and therefore under very much more favourable conditions.

Would Mr. D. M. Macdonald consider that Derbyshire heather-honey had a flavour similar to and as strong as that obtained in his Northern home? If so, ling does secrete in Derbyshire and is not influenced by latitude. My object in writing is not to belittle Derbyshire heather-honey or Mr. Pearman's successes, but to find out, if possible, how far locality affects ling secretion, if at all. The geological origin of the soil may have some effect. I have just received a letter from a well-known bee-keeper, who says, referring to Northumberland: "I know that heather on whinstone is not a patch on that on the freestone of the Cheviots for honey-secretion. There is plenty of honey from Kyloe, down south, past Belford Moor, Harehope, to Alnwick, but no one sends to these moors, and the local bee-keepers, who take their chance, never produce much, although apparently the bloom is as good as you would wish to see." Possibly altitude comes into play in the particular moors mentioned, as they are not much above sea-level. The whole question is to me one of considerable interest and complexity. Perhaps "D. M. M." with his wide experience can help.—Medicus, Newcastle-on-Tyne.

BEE-KEEPING AND THE KENT C.C.

[7963.] May I say a word in reply to "A Murmur from Kent" (page 420) about the Kent Education Committee's exhibition at Tunbridge Wells on the 28th ult.?

The show comprised poultry, eggs, potatoes, apples, dahlias, and honey. I be-

lieve it is generally understood that the exhibition does not aim at being a show in the ordinary sense of the word, the object of the Committee being to bring together as a result of technical instruction a collection of produce for competition, and exhibitors are limited to those who have attended the classes and complied with the rules. It could not be expected in any circumstances that the honey exhibits at this or any other such show would approach in number those of the poultry, as poultry can always be made to pay, and to pay well. Bees, if properly managed, will also sometimes pay the average keeper. With two bad seasons in succession a falling off in the number of honey-entries was to be anticipated, but the quality and get-up of the thirty-six exhibits made a display worthy, I thought, of high commendation.

I have attended the Committee's shows since 1902, and their work in all departments of technical instruction has been publicly and privately spoken of most highly. No complaint has, to my knowledge, been made against the poultry instructor judging in his department, or of the garden produce being judged by the instructor. The honey for several years past has not been judged by the instructor, but by Mr. F. B. White (Surrey B.K.A.), who, I believe, officiated at the recent show.

Personally, I am indebted to the Kent Education Committee for an excellent start in bee and poultry keeping through attending the County Council classes.—E. R. NASH, Smarden, Kent.

[Having considerable experience of poultry-keeping as well as bees, we question very much the statement that poultry-keeping can *always* be made to pay. Under certain conditions it can, but ninety-nine times out of a hundred it does not do so, for various reasons, details of which would be superfluous here. No minor industry of agriculture or horticulture pays so well as bee-keeping. With regard to the statement that no complaint has been made of the poultry instructor judging, if that were correct it would not make it the right thing to do; but when living in Kent we heard numerous complaints on this score, so our correspondent is in error, although he may not have heard any grumbles. That it is not the right thing to do is apparently admitted by the fact that in other years an outsider had been obtained to act as judge. The smaller the show is the more careful should the officials be to avoid the slightest cause for suspicion. Our correspondent does not seem to be very clear as to the procedure in this case, as he is not even certain who really did judge.—W. H.]

HOW TO GET POLLEN OUT OF COMBS.

[7964.] One of the most effective plans of getting rid of pollen is as follows: Place the frames flat on the sward, get an ordinary garden syringe, and squirt water on them; wait for half an hour, when the pollen will have become soft, and again use the syringe; a squirt or two will force out all trace of pollen. Besides getting rid of pollen, the combs will be the better for the wash-out. How to get the water out of combs; this is so obvious that I do not think I need repeat it.—JOHN HALL, Blantyre.

B.B.K.A. LIBRARY.

[7965.] To make the library as complete as possible, will any bee-keeper having bound volumes of the reports of affiliated associations for the following years kindly give them to the Association? Any volume previous to 1884; also volumes for 1889, 1891, 1892, 1893, 1897, and 1904 are wanted.

I would also again remind members and friends that I have not yet received sufficient funds to pay for the bookcases, &c., and that their prompt help in this matter will be much appreciated.—W. HERROD, Secretary, 23, Bedford Street, Strand, London, W.C.

Echoes from the Hives.

Thanks to the really beautiful weather we have enjoyed during the past six or eight weeks, the face of the farmer wears a prosperous and contented look, for, as the hymn says, "All is safely gathered in." The unfortunate apiarist, on the contrary, has had very little to gather in, for the fine weather which was the salvation of the farmer came too late to be of much service to him. The country around was clothed with the blossoms of white clover, sainfoin, and charlock, which would have yielded an abundant supply of nectar had the weather been favourable and allowed the bees to take full advantage of it. As it was, we only enjoyed one really hot week in June, with an occasional bright day sandwiched between spells of cool and stormy weather. However, during the short flow several of the strongest stocks stored from 20 lb. to 40 lb. of honey.

My yield from twenty stocks was 180 lb. of comb and extracted honey, together with about four dozen unfinished sections, which were extracted, and the empty combs, after being cleaned out, were put by for baits next season. I should have obtained more honey had I been able to super with drawn combs instead of sections and frames of foundation, which are,

of course, a great saving of time, and ensures a better crop when the flow is short.

During August and September I drove about forty lots of bees from cottagers' skeps, and used them for increase and re-queening and strengthening stocks. A considerable number of new colonies were formed with a single and, where small, double lots of bees, shaken on to foundation and then fed up rapidly. Most of these have stored 20 lb. of syrup, and are settled for winter.

My bee-driving excursions have taken me into many charmingly situated Cotswold villages, where one may meet with the genuine old skeppist—a picturesque figure who scorns all modern methods of bee-keeping.

I have now increased my apiary to forty-six stocks, twenty-eight of these being located in a plantation on the hills some six miles from here, and all are in good condition for wintering, with young queens and plenty of stores. Hoping 1911 will prove a record year for all.—THE RAMBLER, Cheltenham.

Although there are many bee-keepers in this neighbourhood, very few records of the results of the season's work have appeared in your columns. Last year I recorded an average surplus of 50 lb. per hive. This year the average is only 20 lb.; but, taking into consideration the bad season, I am not so disappointed as some of my neighbours, who have no surplus at all. It was gratifying, however, to find the 1910 crop uncontaminated with honey-dew, and of good colour and flavour. Though I have been here but two years, I am sorry to say that all the local bee-keepers met with have had foul brood in their apiaries. For the good of the craft I have spent a good deal of time in helping them to get rid of it, I am pleased to say with great success. One of the local bee-men, with over thirty years' experience of the locality, expressed the opinion to me that it was impossible for anyone in Finchley to keep clear of foul brood; so it behoves local men to be on their guard, and if a suspicious case is seen to get the assistance of an experienced bee-man.

In your columns recently sundry complaints were made respecting county bee-associations, and as I have their welfare at heart a point I would suggest for the consideration of their committees is that when the travelling expert finds foul brood in a member's apiary, besides mentioning it at the time, he should report the case to the secretary, who would follow his action up by a letter to the owner of the stock. It is a small matter in itself, but details count, and from what has been brought to my notice would seem advisable. A message left with the gardener or domestic, who knows nothing about bees, is so liable to be incorrectly given to the master on his return home. The expert can hardly be blamed; he has to cover a lot of ground, and invariably does his duty both to members and his association. Still, it would assist in ridding the county of foul brood—at least, to some extent—until we can secure for ourselves some desirable legislation, which, as a bee-keeper of experience, I consider essential to our mutual welfare.—V. E. SHAW, North Finchley.

WEATHER REPORTS.

BARNWOOD, GLOUCESTER.

October, 1910.

Rainfall, 3·17 in.	Warmest day, 2nd, 68.
Above average, ·42 in.	Coldest night, 21st, 38·5.
Heaviest fall, ·6 in. on 27th.	Relative humidity, or percentage of moisture in the air, 85.
Rain fell on 15 days.	Number of days with sky completely overcast at 9 a.m., 18; do. cloudless, 1.
Total to date, 24·59in., as compared with 22·26in. for the corresponding period of last year.	Percentage of wind force, 20.
Mean maximum temperature, 58·1; 2·1 deg. above average	Prevailing direction, N.E.
Mean minimum temperature, 45·9; ·9 deg. above average	

F. H. FOWLER (F.R.Met.Soc.).

OCTOBER RAINFALL.

Total fall, 4.16 in.

Below average, .32 in.

Heaviest fall in 24 hours, .91 in. on 16th.

Rain fell on 21 days.

Total fall from January 1, 30.69 in.

W. HEAD, Brilley, Herefordshire.

Queries and Replies.

[4055.] *Dealing with Neglected Stocks.*—I have just bought six stocks of bees, which have been very much neglected, and are in want of food to carry them through the winter. They are in the country, and I shall not be able to see to them till about the end of November. I thought, in the circumstances, of giving about 8 lb. to 10 lb. of flour-cake to each lot. They have nine or ten frames in each hive, and are fairly strong. By the time I can see to them I think it will be too risky to meddle with them, because the combs are so badly built. I shall put plenty of covering on the top of frames till the spring, when I propose to transfer them to hives with frames fitted with full sheets of comb-foundation, as the present ones are not workable. I shall be greatly obliged if you will advise me if I am doing right. I was a constant reader of

your valuable paper some fourteen years ago, but had to give up bee-keeping, and have just made another start.—C. H. C., Brighton.

REPLY.—Yes, candy should be given, but not flour-candy until about February. Wrap up warmly, and your plan of leaving the bees till spring and then transferring them to a new hive is the right one to adopt. We are pleased to hear that you are able to return to the ranks of bee-keepers again.

Notices to Correspondents.

J. M. B. (St. Austell).—*Name of Grub.*—The grub is the larva of *Melolontha vulgaris* (cockchafer, or May-bug), a well-known beetle which appears in April and May, sometimes in enormous numbers, and disappears in June. These beetles are very destructive to trees, but the ravages they commit in the larva state are most serious to agriculturists. The female beetles lay about forty eggs in decaying matter or light soils. The larvæ are hatched in four or five weeks, are very voracious, and destroy a number of plants by devouring their roots. They grow very slowly, and do not become beetles until the third year, so that during their existence they can do a great deal of damage. The one you send is in its second year. They are certainly formidable enemies, and should be destroyed, as they are likely to injure your fruit-trees.

N. S. T. (Notting Hill).—*Value of Old Book.*—"A New Discovery of an Excellent Method of Bee-Houses and Colonies," by J. Gedde, was published in 1675, the second edition in 1676, and this was reprinted in 1722. "The English Apiary, or Compleat Bee-Master," by the same author, was published in 1721, with a reprint of the former bound with it. If in good condition it would be worth from 3s. to 5s. It is probable that the octagon hive illustrated by Gedde was the prototype of the "Stewarton" hive. We thank you for your appreciation of the B.B.J.

SUNSHINE (Paignton).—*Best Hive.*—The "W.B.C." is the better hive for your purpose; the other you mentioned is not suitable for a beginner. The very large return is quite exceptional with any type of hive, and should not be taken as a usual result.

SELCOR (Heybridge).—*The "Wells" System.*—No useful purpose would be served by giving you details of the "Wells" system. We advise you, as in the case of "H. C. S. V.," to let it alone. It has been tried by a number of practical bee-keepers, including the writer, and proved a failure.—[W. H.]

A. C. T. (Tiptree).—*Wild Bees Found Dead under Tree.*—The shrub is *Arbutus unedo*, the strawberry tree. Its flowers appear in October and produce honey. The humble-bees are examples of *Bombus terrestris;* they probably got chilled when working on the flowers.—[F. W. L. S.]

G. P. (Hazlerigg).—*Ownership of Swarm.*—It appears from your statement that your neighbour has laid himself open to a charge of theft. It is not wise to go to law if you can help it, so give him the chance of returning the bees, and if he refuses you can prosecute him.

P. M. R. (Settle).—*Judges Damaging Exhibits.*—We replied to the same query *re* sections some few weeks ago. It is only a very inexperienced and incompetent judge who will damage sections in the manner mentioned. One cell at the side opened with the taster is sufficient. Probably visitors were responsible for the loss in the jar, as we know from experience that they are very fond of opening and tasting the prize exhibits; but this is only possible at badly-managed shows. If properly arranged it is impossible for visitors to touch the exhibits.

B. FOWLER (Peterborough).—*Young Bees Cast Out.*—The bees are immature workers, and have probably died through chill or want of food. You had best examine the hive to see if the food supply is running short, and give the stock a large cake of soft candy. We are inclined to think that starvation is the cause of the trouble.

H. F. (Salisbury).—*Maggots in Honey.*—No doubt they originated in the eggs laid by flies. The vessel should have been kept covered.

J. P. (Stokenchurch).—*Destroying Cells Containing Foul Brood.*—Your plan was not a good one; the quickest and safest way is to cut the cells right out. Use "Apicure" in the hive.

Honey Samples.

A. M. (Colchester).—A very poor sample.

G. B. (Droitwich).—In appearance it is a good sample, but we cannot say more, as by being sent in an "Apicure" bottle the flavour of the honey is completely spoilt.

P. J. (Shustoke).—(*a*) Honey of rather good flavour, but coarse in grain; from clover. (*b*) Good grain, rather dark; from limes. (*c*) Not yet quite granulated, but will make a good sample; from clover.

ENQUIRER (Olton).—The honey is from lucerne, as the pollen in it is from that plant. There is, however, very little pollen in the sample, and it is possible the bees have had access to syrup. There are also a few grains of pollen from sage.

Editorial, Notices, &c.

NORTHUMBERLAND AND DURHAM B.K.A.

ANNUAL EXHIBITION IN NEWCASTLE.

The tenth annual exhibition of honey, &c., of the Northumberland and Durham Bee-keepers' Association was held on October 29 in Crosby's Café, Northumberland Street, Newcastle. There was a fair show considering the poor season, which had been affected by the cold and damp weather. A great many bee-keepers did not get their hives to the moors until August 13, and the best honey-flow was from the 6th to the 13th. This caused the heather-honey harvest to be much poorer than it would otherwise have been. Owing to the two past seasons having been bad, a lot of stocks have died off, and in some particular districts bees would not have been kept except as a hobby. The judges were Messrs. Kidd and Gardner, who made the following awards:

Observatory-hive.—1st, J. Smith, Forest Hall; 2nd, J. N. Kidd, Stocksfield.

Six 1-*lb. Sections.*—1st, Captain Sitwell, Wooler; 2nd, R. Robson, Wooler; 3rd, J. Hay, Gosforth.

Six 1-*lb. Jars of Extracted Honey.*—1st, J. R. Risby, West Hartlepool; 2nd, R. Robson; 3rd, J. W. Eggleston, Consett; 4th, J. Smith.

Six 1-*lb. Heather Sections.*—1st, J. Hay; 2nd, R. Robson; 3rd, Captain Sitwell; 4th, R. Duncan, Medomsley.

Six 1-*lb. Jars of Extracted Heather-honey.*—1st, A. Smith, Consett; 2nd, G. Robson, Butterknowle; 3rd, J. R. Risby; 4th, J. Smith.

1-*lb. Section of Heather-honey.*—1st, J. W. Eggleston; 2nd, J. Hay.

Super of Heather-honey.—1st, A. Smith; 2nd, Geo. Rochester, Blackhill.

SPECIAL PRIZES.

Display of Three 1-*lb. Sections, Three* 1-*lb. Jars Extracted Honey, Three* 1-*lb. Heather Sections, Three* 1-*lb. Jars Extracted Honey.*—1st, A. Smith; 2nd, J. W. Eggleston.

Super of Heather-honey.—1st, G. Rochester.

Beeswax.—1st, W. S. Watson, Wolsingham; 2nd, Captain Sitwell; 3rd, J. W. Eggleston.

MEMBERS' CLASSES.

Super of Heather-honey.—1st, A. Smith; 2nd, G. Rochester.

Three 1-*lb. Heather Sections.*—1st, A. Smith; 2nd, R. Duncan; 3rd, W. Hogg, Knitsley; 4th, G. Rochester.

Tall Section of Heather-honey.—1st, A. Smith; 2nd, R. Duncan; 3rd, G. Rochester.—R. ROBSON, Hon. Sec.

LEICESTERSHIRE AND RUTLAND B.K.A.

An autumn conference of members and friends, numbering upwards of sixty, was held at the Highcross Restaurant, Leicester, on Saturday, October 29, Mr. G. O. Nicholson, Market Harborough, occupying the chair. The first hour was devoted to hearing the reports of the delegates to the meeting of the B.B.K.A. in London, of which the Leicestershire and Rutland Association is a branch, also to the examination of a number of objects of interest connected with apiculture, the uses of which were explained by the secretary. This was very interesting, and is likely to prove beneficial to those present. Tea was followed by the distribution of prizes won at the Abbey Park Show, and Mr. Geo. Hayes (lecturer to the Notts County Council and Midland Dairy Institute) gave an interesting and instructive lecture on "Nectar-Producing Plants and their Pollen," which was illustrated by photo-micrographic slides. There was every evidence that the conference was a success, and those responsible for the promotion and carrying out of the arrangements are to be congratulated upon their venture.

AMONG THE BEES.

COMBINATION.

By D. M. Macdonald, Banff.

This subject deserves more serious attention than it has received in the past. I do not mean by it simple association of a number of bee-keepers in a district or county B.K.A. That is good of its kind, and a thing much to be desired. The combination I desiderate strikes its roots deeper. Even when there is a county bee-keepers' association doing good work, how little of combined effort really follows. How few of the members meet even once a year, and how very few of them take a really active share in the management. Power is delegated by the members to a large committee; by this body all *labour* is passed on to a working sub-committee, and these again hand over the actual work to a self-denying secretary and one or two active members who spasmodically help to bear the burden and heat of the day. There is no real combination here.

Shifting the point of vision, I see each member, as soon as he is able to take off his first super, intent on being the first on the market, and keeping his produce pushed as far in front as he can until he has realised the uttermost farthing. Perhaps that is only a sample of human nature. "Each will for the good of the whole is bent" is the rule for *Apis mellifica*; "Every man for himself" is the

more selfish motto adopted by the apiarist. There is no combination here. This is not, I think, as it should be.

The want of combination works for evil in one or other of the three following ways: 1. The supine, easy-going man, perhaps not in any way depending on his bees, takes the first offer given him, say 8d. per section for his best, and he and his kind establish a price in the local market without regard to the genuine value of the article he retails. The chances are that the middleman easily obtains 1s. for the article which cost him 8d.

2. The anxious, nervous bee-keeper, finding the market at least temporarily glutted, loses his head, and, fearing he may have surplus left on his hands, is easily tempted by the facile tongue of the middleman to sell off at 6d. Such a bargain once struck has a tendency to repeat itself. A neighbour is informed of the transaction, foolishly disposing of his produce at the same figure, and so the market gets more and more corrupted.

3. The bee-keeper who looks about him discovers other fields wherein he can dispose of his surplus, perhaps only in the neighbouring county, and he retails his all with facility at 10d. per section. His produce is no better, his sections no more perfectly filled; the only difference is that he commands a wider horizon. That is just what I would plead for all, and by *combination* it can be bestowed on the veriest stay-at-home. If this is done the whole status of bee-keeping will be raised as it can be in no other way, because then bee-keeping *will* pay.

The three cases I have given are no imaginary ones, because samples of them came under my own observation this year, both in the North and South. In Canada they have a few representative bee-keepers formed into a committee, and these gentlemen of wide experience, and taking a general view of the whole country, announce a price below which they advise that no surplus should be sold. This guiding index is in general faithfully followed, with the result that they have few or no *blacklegs*. I would suggest that something of this kind should be taken up by the B.B.K.A., and I have no doubt favourable results would follow. Selling fine clover-honey in a season such as we have just had for 6d. or 8d. was folly, or worse; throwing off prime heather sections under 1s. 2d. or 1s. 3d. was simply presenting the rich buyer with so many pennies to add to his wealth. Why, to-day I have had a letter from the secretary of a county B.K.A., wherein he states: "Heather-honey being very scarce, good sections are readily retailing at 1s. 9d. to 2s. each."

The Curry-comb. — The curry-comb, pecten, or strigilis, as it is variously named, is a deep circular incision in the anterior leg of the worker-bee, the drone, and the queen, and is provided to enable them to clean up their antennæ when these delicate organs are soiled by any foreign matter. The process may often be observed going on near the entrance to the hive. Resting on the other four legs firmly, the insect deftly draws the right antenna through the left pecten, and vice versa, when the velum, or sail, is brought down over the entrance, thus forming a complete circle along which the antenna is drawn. This operation is repeated until the insect deems its feelers are perfectly rid of all impurities. The comb is formed of a deep incision, the sinus, and a set of stiff hairs fringing the edge. The velum is hung on the lower part of the tibia, and works on a hinge, so that it can be brought down and pressed firmly on the antenna at the will of the insect. The sail pressing on the stiff hairs cleans the "feelers" perfectly after a few strokes. When we remember that these antennæ are wonderful organs of touch and feeling, that they are possessed of thousands of "small hollows" unquestionably delicate olfactory organs, and that they are supposed to be the centre of several others of the senses, we must recognise that they have to be kept scrupulously clean, and free from any impure foreign substance or odour. Here, then, appropriately situated on the metatarsus, the lower of the two largest joints of the front legs, is provided the means for carrying out this delicate and important operation. Bees act as if they believed in the truth of the statement that cleanliness is the chief of the cardinal virtues, and an ancient writer held them up in this respect "as a mirror to the proudest dames." As we have seen in this instance, Nature has provided them with admirable means to this end.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEES AND FLOWERS.

[7966.] In the *Record* for March, 1910, appeared an extract from *Knowledge* entitled "The Constancy of the Bee." The author, Mr. G. W. Bulman, seemed to be of the opinion, contrary to the usually-received idea, that bees are in the habit

of changing frequently from one species of flower to another while out on their foraging expeditions. He mentioned some observations in support of this, but they seemed inconclusive; so it occurred to me that a further investigation of the matter would be of interest.

As Mr. Bulman rightly says, it is impossible to follow a bee during the whole of a flight from the hive. We cannot, therefore, investigate directly the behaviour of a nectar-gathering bee; but with respect to pollen the case is fortunately otherwise, for the bee herself has made notes, so to speak, of where she has been (in the shape of the pellets in her pollen-baskets), and we can possess ourselves of that information by the simple expedient of picking her pocket as she alights at the hive-entrance.

Last year (see B.B.J., 1909, page 334) I sent you an account of some observations which led to the conclusion that bees do occasionally return home with a mixture of two (or, rarely, more) kinds of pollen. I need not, therefore, here repeat the description of my methods, nor of the precautions taken to ensure accuracy, but will merely add that this year these precautions have been made more stringent, and that I believe I may say that errors arising from careless manipulation have been for the most part avoided.

It is manifest that, if the view that the bee wanders much from species to species be correct, mixed loads of pollen should form an appreciable percentage of the number brought into the hive. If, therefore, we find that this percentage is small we may conclude that, in all probability, bees are usually constant to one species of flower during each flight. There remains, of course, the possibility that a bee might work on two kinds of flower at once, gathering pollen from only one of them; but this is not, I think, very likely to happen.

This year notes have been kept of the number of loads examined each day, and of the number of mixtures found among them. From July 10 onwards a record was also kept of all cases of "doubtful mixtures"—cases, that is, where a few grains (often only two or three) of some different kind of pollen were found in an otherwise unmixed load. The mixtures caused by flies, &c., carrying pollen indiscriminately from species to species (referred to by your correspondent "S. J." in B.B.J., 1909, page 354) are probably to be found among these; for such cases will contain only a very small quantity of "foreign" pollen, whereas in a real mixture an appreciable amount of the second kind is almost always to be found. (I should add that I examined either the whole of each load, or at least a very considerable portion thereof; so that it is improbable that I missed many "doubtful mixtures," even where very little of the second kind of pollen was present.)

If loads of pollen were taken at random, without any regard to their colour, then the average percentage of mixtures in the loads examined would be equal to the actual average percentage of mixtures entering the hive. But this was not done. The method employed was as follows:

All mixtures seen are taken, if possible, while of unmixed loads I take only a few of each kind per day (rarely more than five on an average). Hence, even if half the mixtures escaped my notice, I should still be taking a much larger proportion of the mixed loads than of the unmixed ones, and therefore the percentage of mixtures among the loads recorded in my notes will be considerably higher than the actual percentage of mixtures among the loads entering the hive. This conclusion is confirmed by the fact that July, the month when most pollen is coming in, is also the month which has, in my notes, the highest percentage of mixed loads—13.70 per cent. It is obvious that the larger the number of pollen-loads entering the hive per minute, the greater the disproportion between the number of unmixed loads captured and the number entering the hive; while the proportion of mixtures captured will probably not be much reduced, because they are not plentiful enough to be coming in three and four together, like the unmixed loads, and therefore I shall be able, as usual, to capture a large proportion of them.

During the year (March 4 to October 18) 1,589 loads were examined; of these, 144 were mixtures. (Some of these were not certainties, but I count them in order to give the benefit of the doubt to the theory that bees wander from one species to another.) This gives the percentage of mixtures as 9.06 per cent. If we consider the period during which all the "doubtful mixtures" (fly-mixtures, &c., above referred to) were recorded—that is, July to October inclusive—we get 12.64 per cent. of mixtures; or, if all the "doubtful mixtures" be counted as true mixtures (which they certainly are not), 29.15 per cent. So that, even on the most liberal estimate, not one bee in three mixes her pollen at all, and not one bee in ten mixes it to any appreciable extent (taking the year's average). Moreover, for reasons given above, these figures are in excess of the real percentage of mixtures.

We may therefore safely conclude that bees do keep, as a rule, to one kind of flower during each flight.

We may now inquire what circumstances influence the bee when she mixes her pol-

len. Are the constituents of a mixture usually derived from two flowers of similar colour, or from nearly-related plants, or from flowers which, though not necessarily nearly related, belong to the same flower-class?* The following table gives the results arrived at by classifying the mixtures observed this year under these heads (eight of them consisted of three or more kinds of pollen, and have been omitted). The remaining 136 were composed of pollen derived as follows:

	Natural Orders.	Flower Colours.	Classes.
From two flowers of same ..	28	29	34
From two flowers of different	95	70	79
Origin unknown	13	37	23

Apparently, therefore, bees are not induced to change from one species to another by any kind of similarity between the flowers of the two plants. What does induce them to do so is pretty obvious; it is proximity. There are very few cases among the mixtures observed during 1908-10 where it is at all likely that the two pollen-plants were growing at any considerable distance apart, and in the great majority they were, if not actually intermingled, at least growing close together.

While on the subject of pollen, reference may be made to a fact which is, I think, sometimes overlooked, and may lead us to accuse a bee of wandering from species to species when she is, in reality, doing nothing of the sort. A good many plants have pollen of a totally different colour from that of the flower. The following is a short list:

Plant.	Colour of Flower.	Colour of Load of Pollen.
Wallflower (*Cheiranthus cheiri*)	Red brown	Grey-green
Horse Chestnut (*Æsculus hippocastanum*)	White and pink.....	Bright red
Heather (*Calluna vulgaris*)	Red-mauve	Light grey
Heath (*Erica cinerea*)	Red	Grey
White Clover (*Trifolium repens*)	White	Brown
Lime (*Tilia europæa*)	Greenish-white	Golden-brown
Bird's-Foot Trefoil (*Lotus corniculatus*)	Yellow	Bone colour
Willow Herb (*Epilobium angustifolium*).....	Red	Greenish-blue

There are also cases where two different plants have pollen which is of almost exactly the same colour when in the bee's pollen-basket. Portugal laurel and bird's-foot trefoil are good examples. It will be understood, therefore, that it is rash to draw conclusions as to the plant from which a load of pollen was obtained until one has examined that pollen under the microscope.—Annie D. Betts, Camberley.

NOTES FROM NORTH HERTS.

[7967.] *Bee-venom* (page 400).—We know that the physiological effects of the fresh and of the dried venoms are the same, because physiological experiments prove that such is the case. We also know that the effects of formic acid differ from those of bee-stings. As to the use of the acid, I can only hazard the suggestion that it ensures the fluidity of the albuminoids which constitute the active agents. An alkaline medium might be unsatisfactory, and a neutral one would not allow a margin for the slight variation which is the rule in Nature.

Whether the acid is formic acid or some other acid I do not know, and prefer to leave the question open for the present. About a hundred years ago a chemist discovered that he could make formic acid, but that he could not make bee-venom. Most of the modern writers are content to state that the poison has an acid reaction, or that it is "said to be formic acid, but"—and here follows some statement to show that it is *not* formic acid.

At a conversazione of the B.B.K.A. held in October, 1908, a discussion on "Stings" was introduced by Colonel Walker, who pointed out that both bee-venom and wasp-venom were said to contain formic acid, but that they are distinctly different in odour and effect. On the same evening Mr. Reid stated that he had injected an amount of formic acid which in quantity represented 100 bee-stings, but that although it was painful there was no swelling. He also stated that modern investigation proved that the active principles of bee-venom were albuminoids. Mr. Crawshaw took part in the discussion, but raised no objection to this explanation.

Are All Eggs Alike? (page 400).—If Mr. Crawshaw's text-book teaches that all eggs are male when in the ovary, I fear that I am not a strict adherent to its teaching. I believe that the female constituents are present in the egg of the laying worker, but that the normal stimulus to their development is absent. I am not prepared to assert, however, that such development is an absolute impossibility. Von Siebold states that the parthenogenetic ova of a wasp produced a small percentage of females during times of plenty. In the case of bees all recorded instances that have come to my knowledge of drone-eggs in queen-cells tell against a similar phenomenon. But if a case did happen we should probably explain it by saying that

* Hermann Müller's classification of flowers, according to their adaptations to insect visitors, is here referred to.

the bees stole the egg from another hive. I do not know if the hermaphrodite is the product of an abnormal parthenogenetic egg or of an abnormal fertilised one. I do not know which kind of cells they are bred in, or how the cells are capped.

Some modern entomological text-books give an alternative explanation to that of Mr. Crawshaw's text-book. This alternative theory has been very clearly stated by Snodgrass in "The Anatomy of the Honey-bee," recently reviewed in the columns of the B.B.J. "My own view" was stated in full, so that the Editor should know that I had not embraced that particular heresy. — G. W. BULLAMORE, Albury, Herts.

ENGLISH HEATHER-HONEY.

[7968.] Having noted in several recent issues of B.B.J. somewhat disparaging references to English heather-honey, I should like to say a word in its favour, especially the heather-honey produced in the South. Here, in and on the borders of the New Forest, there are practically miles of heather, both *Erica cinerea* (bell-heather) and *Calluna vulgaris* (common ling), besides a few other heathers or heaths.

The bell-heather flow generally commences in July, and is a thin honey of very fair flavour. In August the ling flow commences, and generally continues until the end of September. This honey is of very great density, and is not so dark as the heather-honey of the North. To get this honey in its purity I extract all sections, shallow frames, and brood-combs (outer combs) just as the ling flow commences, and by this method get only pure heather-honey stored in the supers. The extracted I grade as heather-blend, and it contains bell-heather, clover, blackberry, and a little lime honey, and also a little of the first gathered from the ling.

The density of ling-honey is so great that an uncapped section may be placed on a plate face downwards and left for a week without any honey running out. In fact, at the present moment there is part of a section in a glass dish on the breakfast table that has been in use for over a week, and no honey has run out of the uncapped cells. After cutting off a little the rest remains a solid piece.

In conversing with a neighbouring bee-keeper the other day I spoke of the heather-honey being like jelly. He said, "No! More like toffee in density." And with regard to the flavour a lady writes: "It is the finest honey I have tasted; in fact, better than the heather-honey I have had from Scotland."

I am sending an unsealed section for your opinion. Sorry I have not a sealed one left, all being sold.—P. DICKINSON, Hampshire.

[The section is a very good sample of pure ling honey, and, though broken away from the wood, none of the contents had run out of the comb.—ED.]

SECTION-FOUNDATION.

[7969.] A constant reader of your interesting little periodical, I am disappointed that Mr. Macdonald's remarks (page 394) have been allowed to pass without criticism. But, before going any further, I wish to say that I make no pretence of having had an extensive experience in bee-keeping. Therefore, I am not presuming to challenge the opinions of such an able exponent of the craft as Mr. Macdonald, or question his statement that a wandering queen would retire from the supers when she found only worker-comb there. But to the point. I have always thought it a mistake to force bees to build worker-comb in sections, thereby entailing extra work on the tiny toilers, and, incidentally, curtailing their master's profits. I know it is contended that the larger-celled sections would bring less money in the market, and that no one would look at them on the show-bench. But if someone would introduce them as an improved section on the ground that the smaller cells contain more indigestible wax, this would soon effect a change.—T. D., Duddon Valley.

EXPERTS AND FOUL BROOD.

A COTTAGER'S VIEWS.

[7970.] Would you kindly allow me as a cottager bee-keeper to give my views on the subject of experts and foul brood? I for one do not think it right for County Councils (page 420) to throw so much money away with so little result, if what your correspondent "Nil Desperandum" relates is true.

I have been a reader of B.B.J. from the year it was first started (1873) to the present time, and I see in a recent issue that an expert states that the "Isle of Wight disease" is not contagious, while another says that the only steps one can take is to destroy the stock and burn combs, &c. If the disease is not contagious, why burn the combs and disinfect the hive? I firmly believe that experts carry about infection, and can give an instance of a case which came under my own notice. A certain expert on his tour visited several bee-keepers of my acquaintance and overhauled their bees. In the hive which I will call No. 1 the expert found the bees not very strong, but covered them up and left them; they have since then died. He then went to another

stock, which he also overhauled and left. This (No. 2) had a splendid lot of bees, but on my examining them a short time ago I found them nearly all dead, and only some five or six bees remaining with the queen, though there was plenty of honey in the hive. I happened to have bought a stock from this apiary just before the expert called, and this is still quite healthy and strong. Shortly afterwards when at market a bee-keeper asked me how my bees were getting on, and told me his were nearly all dead. He had about thirty-six stocks: the same expert overhauled this apiary, and now there are only about twelve stocks left. Of course, I cannot say why the bees died, but I do not want this expert to look at my bees.

As to the foul-brood question, I fancy if some of our leading men who wish for legislation were to examine the cottager bee-keeper's apiary, which is so often mentioned as a source of infection, they would find the hives as clean and as free from disease as those of many of the big bee-keepers. I think that if the importation of foreign queens were stopped it would be a great boon to British bee-keeping. If there is no cure for foul brood, of what advantage would legislation be? and if there is a cure let us apply it and legislation will not be needed, though I doubt if destroying all the stocks that are affected would stop it. An expert once called on me who did not know what foul brood was, so, naturally, he was no use to give any advice or information regarding it. But that day is, happily, gone by, and I should always be pleased if anyone would tell me anything for my good. Most of the experts can talk, but we do not see that they put much on the show-bench as an example to teach us cottagers what good bee-produce is like. I enclose my name for reference, and now that I have given you my opinion, which may be right or wrong, I sign myself—A Cottager Bee-keeper.

NATURE-STUDY FOR BOYS.

[7971.] Some time ago I paid a visit to the superintendent of the Cottage Homes connected with the Worcester Union, and he very kindly took me over the place, and pointed out to me the various things the boys were taught to do to fit them for situations of various kinds. Some, I found, are intended for farmers and gardeners, while others are from time to time sent to Canada. The thought struck me that if these boys had some knowledge of bees and bee-keeping it would probably be of use to them in after life, and I offered to teach them what I could if the superintendent would arrange to bring them in parties to my apiary any evening. On putting the matter before his committee and the Guardians, they very kindly consented to let the boys come. Saturday afternoon is the only time available, and unfortunately it is not always fine, but so far we have managed very well.

I enclose some photos, one of which

LEARNING TO HANDLE THE FRAME-HIVE.

shows the boys before I commenced to teach them how to handle a frame-hive. Another shows a view of my apiary where the classes were held. An hour spent explaining the art of driving bees and pointing out the many advantages of the modern frame-hive over the old-fashioned skep passes very quickly and pleasantly.

The boys appear to take a very intelligent interest in everything, particularly in the number of stings each one gets, and are filled with wonder.

I hope to arrange for them to attend a few lantern lectures during the winter months, so as to keep their interest alive, and in the spring to continue the practical part of the work. I have supplied them with a quantity of BEE JOURNALS and *Bee Records* to read.

MR. J. BRIERLEY'S APIARY, ASTWOOD, WORCESTER.

I am sending this account to you in the hope you may find room for it in one of your papers, and that it may be the means of inducing some other bee-keeper with a spare evening to adopt the same means of brightening the lives of boys in similar institutions, and at the same time giving them an opportunity of learning something about one of the most beautiful and useful small things in creation.—J. J. BRIERLEY, Astwood, Worcester.

LEGAL PROTECTION OF HONEY IN GERMANY.

Mr. F. Vogt, Leyton, sends the following extract from the German bee-journal *Die Biene*, which is an abridged report of the proposed measures for the protection of bee-keepers in Germany with regard to adulteration and artificial honey:

PROTECTION OF HONEY IN GERMANY.

At a meeting of bee-keepers recently held at Frankfort-on-Main for the purpose of discussing the question of the legal protection of honey the chairman pointed out that it was well known to bee-keepers as well as lawyers and police authorities that the present law with regard to the adulteration of food, &c., does not suffice for the protection of honey against the unfair competition of honey-like products.

The following factors were said to be the "tombstone" of genuine honey production:

1. The "Zuckerhonig" (sugar-honey) produced by dishonest or short-sighted bee-keepers.

2. Foreign honey which frequently is but an artificial honey.

3. Artificial honey in general.

Against the unfair competition of these three factors the German bee-keepers, who claim to have a right to the maintenance of genuine honey production, are demanding legal protection. However, as every law affording protection begins with the definition of the matter for which protection is sought, the following question arose: "Is a definition of the word 'honey' necessary at all?"

It was held that this was not requisite in view of the fact that "butter" had been protected without laying down an understanding before law by ascribing to its competitor the name of "margarine."

If it was possible to protect butter against its competitor "margarine" in so simple a manner, it should be possible to protect honey also against the competition of "artificial" honey without fixing a definition. Thereupon the question was asked: "Can a clear and concise definition of the word 'honey' be given at all?" To which the chairman replied that, whilst it is true that the principal characteristics of honey depend entirely upon the sources from which it is gathered, it was quite clear to his mind that honey is (1) a sweet element of Nature (2) gathered by bees (3) from live flowers. This was considered a true and adequate definition. The phrase "a sweet element of Nature" precludes, therefore, the feeding of syrup within or in the vicinity of the hives for the purpose of *honey-production*, and the term "gathered by bees" shields against the preparation of honey in factories.

After a lengthy discussion (not mentioning the criticism) it was resolved that the following stipulations be submitted to the Government with a request to enact the same as law—viz.: §1. Honey is the natural sweet element gathered by bees from live flowers. §2. The feeding of liquid sugar within or in the neighbourhood of the hive or hives with the intention of selling the product as "honey" is prohibited. §3. The admixture of liquid sugar with extracted honey with the intention of putting the product upon the market as "honey" is also prohibited. §4. The feeding of bees with liquid sugar (syrup) is allowed (*a*) for the purpose of maintaining the bees during winter and also after the honey-flow; (*b*) for the feeding-up of swarms. §5. The admixture of small quantities of syrup (§4) used for feeding with the honey gathered by the bees shall not be considered as an adulteration of honey in the sense of §2. §6. Every owner of bees selling honey is obliged—(*a*) to affix a legible copy of this law (§§1-6) to at least one hive in his apiary; (*b*) to allow any expert to inspect his hives at any time (April 1 to October 15), and to render him all information as to the quantity and origin of the sugar used for feeding; (*c*) to admit any authorised police officer (during daytime) into the rooms used for extracting and bottling honey, and to allow him to test the latter. §7. Foreign honey shall only be admitted into the country if it is in accordance with the foregoing stipulations.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of October, 1910, was £1,444.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Percentage of Comb-builders (page 394).—"D. M. M.'s" estimate of 50,000 cells in construction is surely over-liberal. Taking a maximum of fifty cells to the cubic inch, this involves 1,000 cubic inches, or almost the entire comb-area of a standard hive. The average number of cells to the inch would be below this in natural comb, including drone and other cells. I think that nothing like this area is in process at any moment. For the upper portions of the combs are complete and in free use, whilst still the cup-shaped cloak of wax-workers enhammocks itself about its work. An estimate of 30 cubic inches of process work would seem to be ample. This is based upon an average fringe of about 3½ in. of incomplete work. At any rate, I have not found such an overwhelming advantage in the use of full sheets of foundation in the brood-nest, viewed solely from the point of view of surplus honey. Indeed, the advantage has appeared to lie with starters only. I have, however, an open mind on the subject, and purpose to renew experiments next season. Incidentally, it would be interesting to know whether comb-building proceeds at the same rate during the day as in the night-time. Can any of our friends who possess observatory-hives tell us?

Chloride of Lime (page 399).—In the plan adopted by Mr. Brinsley the chloride would appear to be some inches below the floorboard, and as the gas is heavier than air it is doubtful whether it would penetrate the hive. More likely it would slowly leak out of the inverted tin lid in which it was placed, and so be dissipated. As Mr. Brinsley pertinently remarks, "it is not harmful if placed far enough away from the bees"! But in that case does it accomplish the purpose? If it does, it would evidently be better to control matters by regulating the dose rather than the distance.

Bees and Disinfectants (page 408).—Mr. Bullamore may be right that it is bad to give disinfectants to the bees, but it may be worse not to do so. Perhaps he will say whether he has had disease and how he treats it. It is all very well to treat it drastically, but it is discouraging to find it recur time and again from some outside source of infection. After all, the proof of the pudding is in the eating, and the fact remains that "disinfected" bees are able to keep foul brood in check, if not actually to free themselves from the disease. I refer to the use of naphthol beta, which is the only drug I now employ, after some considerable experimenting with other nostrums.

I may say, however, that I have not yet tried the new "simple, clean, efficient" remedy which is being advertised in the B.B.J., and I should be very glad to know if we might have a report upon it from some reliable investigator. There is this to be said also for the use of naphthol: that it must make the user very careful not to admit syrup into his surplus. To detect any such misadventure I use a scarlet dye in the food. I fed about 3 cwt. of sugar-syrup this autumn, and found less than a teaspoonful of the dye powder sufficient for the quantity.

Bee-hive as Incubator (page 410).—It is almost certain that no ordinary beehive has sufficient heat during the first few months of the year to hatch chickens, even if the eggs themselves possessed the requisite vitality. And chickens can almost certainly be obtained more conveniently during May and June by "t'owd road"! So that the six months defined by Mr. Siebel would hardly seem to bear his justification. I have, however, missed the true point of Mr. Decker's comparison, which would seem to be that one hive is likely to gather more honey in six months than any eight hens. I suppose I ought not to say "hive," for Dr. Miller across the water has just been taking me to task for the sin.

Second-hand Frames (page 416).—"D. M. M." condemns these heartily, but it is questionable whether they should be condemned unheard. After reading his warning I went out to where two big bunches of frames have been hanging in all weathers throughout the summer. These were removed in the spring from hives under suspicion of disease, and, the contents being disposed of, the frames were boiled in a strong solution of soda, and then hung in the trees to further sweeten in sun and rain and air. Now, of all the lot only a trifling percentage are warped, and those have light top bars. All the dovetailed frames are warped, and none of the thick top bar frames of my own pattern. The warping is in all the cases due to a twisting of the top bar. In all probability "D. M. M." uses the dovetailed frame, and a trial of a more substantial pattern would give him a pleasurable satisfaction. The question arises whether in using the dovetailed frame there is any advantage at all which compensates for its disadvantages. There are numerous other frames on the market which are far better and quite as convenient, and I believe that a thoughtful bee-keeper would not tolerate the dovetailed pattern if it were not for a certain false appearance of cheapness. And this cheapness and convenience is only superficial, for a plain frame, costing certainly no more, can be assembled by means of a jig, or frame-holder, quite as readily and truly. I have in the past animadverted upon the unspeakable "saw-cut," and do not desire to add anything on that count beyond saying that a $\frac{5}{8}$-in. thick top bar with a central groove is much to be preferred.

Queries and Replies.

[4056.] *American Methods of Extracting.*—Would you kindly explain the reason for the following? American writings on bee-culture all speak of the necessity for either taking off honey for extracting without using super-clearers, or, if they do use them, they *warm* the honey before extracting. Personally, I have used the super-clearer and *not* warmed the honey, and have not noticed any drawback; but this may be my want of observation, so I shall be much obliged if you will tell me why it is recommended. It occurred to me that the reason might be that the honey would not leave the combs unless warm; but it *seems* to run out clean enough in the extractor, even when combs are left forty-eight hours over the super-clearer before removing.—A. P., Sussex.

REPLY.—Climatic conditions are different in America, also bee-keeping is carried out on a much larger scale than here, and it must necessarily take longer to get round a large number of colonies, so that if the clearers are left under the racks too long, the honey, becoming much thicker on account of the warmth from the bees being shut off, would not leave the combs so readily. If the honey is not left more than forty-eight hours over the clearer, and it is not too late in the season, it will extract all right. When warm, honey is thinner, and, of course, leaves the cells much better.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

H. C. (Bramber).—*Willow Herb.*—The plant alluded to is *Epilobium hirsutum*, the great willow herb, sometimes called

"codlins and cream," which is abundant in England, and grows on the sides of ditches and rivers and in wet places. Common near the River Arun. Another equally good plant, although not so common, is *Epilobium angustifolium*, or rose-bay. This can be obtained from T. S. Ware, Ltd., Feltham, Middlesex, or other dealers in herbaceous plants. All the willow herbs are excellent nectar-yielding plants.

J. CHAPMAN (Dundee).—*Suitable Bee-candy.*—The sample is a good one, and no doubt would sell well, as it is soft without being sticky. Candy is put up in glass-topped boxes, which enables the bee-keeper to see the condition of the food supply without disturbing the bees. We cannot say what quantity of this food is used in this country each winter, but no doubt it is considerable. For advertisement rates in "Business" column see page v.

H. H. (Swaythling).—*Bees Preferring Candy.*—Bees will sometimes live upon candy although they have stores below. To be quite safe keep a regular supply of candy on the hive.

G. S. (Bisley).—*Perennial Bee-flowers.*—Messrs. Sutton and Sons issue a special list of flowers suitable for bees. You can obtain this by writing to them at Reading.

A. J. G. (Trimsaran).—*Points in Judging Honey.*—1. The usual judging points are density, flavour, colour according to class, aroma. 2. Particulars as to obtaining an expert's certificate can be had on application to the Secretary, B.B.K.A., 23, Bedford Street, Strand, London.

H. S. (Cheshire). *Reference Book of Advertisers.*—Unlike the paper you mention, which is run purely as a general advertisement medium, the number of advertisers in the bee-trade is so limited that it does not warrant the expenditure you suggest. The deposit system secures our readers from loss effectually, and we are careful to safeguard their interests by excluding any advertiser found to be at all shady in his dealings.

F. H. F. (Gloucester).—*Cleaning Propolised Excluders.*—Soak them well in a strong solution of water and Fels Naptha soap, or in methylated spirit, when the propolis can be easily removed.

WASP (Enstone).—*Wintering on Artificial Stores; Using Excluder.* 1. The sugar-food, if properly made, will be quite suitable for the bees. An excluder should always be used under shallow frames, otherwise the combs become badly stained through brood having been reared in them. For sections the excluder is not absolutely necessary. 2. We have known bees to remain on a bush throughout a wet night such as you describe, though there is great risk of their perishing from exposure. As yours was a case of driven bees coming out of their hive, there must have been a queen, although you failed to find her.

F. J. (Patcham).—*Mildewed Combs.*—1. Spray well with methylated spirit, and when thoroughly dry sift some fine castor sugar into the pollen-cells, and put combs in a dry, warm place until wanted in the spring. 2. When the thermometer registers 235 deg. to 240 deg. Fahr. the sugar is sufficiently boiled. 3. It is impossible to say why the queen was lost, and she may have been injured in examining the hive. If another queen has not been reared it would be because there was no suitable brood for the purpose, and would indicate that the queen had ceased laying some time before she was lost.

K. H. (Preston).—*Using Eighteen-frame Hive.*—You can make it answer the purpose of an ordinary ten-frame hive by using a plain dummy, or it can be used for obtaining queen-cells on the "Sladen" principle. We should strongly advise you not to use it as a "Wells" hive.

A. P. (Coggeshall).—*Candied Sections.*—The tradesman has no claim whatever upon you, as the sections were delivered to him in good condition. It is impossible to guarantee that honey will not granulate, as the period during which it will remain liquid is affected by the source from which it is gathered, how it is stored and where, &c.

Honey Samples.

D. D. (Talgarth). The honey is a very nice sample; if anything, it is a little too coarse in grain. Flavour and colour are both good. Principally from clover.

E. G. (Clayton-le-Dale). A good-quality honey from mixed sources, heather (ling) predominating. It is rather thin, and should be worth 1s. 6d. per lb. retail.

S. C. (Crewe).—Yes, the honey is Australian; it is sold at the price you name very largely in London. We know a large consignment came over and has been distributed all over the country. Needless to say, it lacks the characteristics of English honey, though Australians think it excellent. Tastes differ in various countries, and this kind does not suit the English palate. The sample has been over-heated, which gives it a burnt taste. If you did not heat it, it may have been done by the salesman to liquefy it.

Editorial, Notices, &c.

FOUL-BROOD LEGISLATION.

HOW THE BEE-PEST PREVENTION ACT WORKS IN IRELAND.

One of our subscribers in Ireland, Mr. Stephenson, who is defendant in one of the cases, has sent us a report (see p. 468) from the Wexford *People* of the first prosecutions against bee-keepers heard at Clonroche Petty Sessions, in the county of Wexford, and we have pleasure in printing it in view of the hostile attitude of some of our bee-keepers on the question of legislation.

In this case there is no objection raised to the Bee-Pest Prevention Act, but the bee-keepers object with considerable reason that their colonies should be inspected during the height of the honey flow when the bees are in full work. The Act provides that the bee-inspector should be allowed to come to examine the hives at "all reasonable times," and the regulations were taken by the County Council to mean "any time between April 20 and October 31 inclusive, when the bees are flying." The defendants contended that this was not a reasonable time, and that it would be a serious loss if the bee-inspector disturbed their bees when in full work, as they would lose three or four days after being thus disturbed. Of course, one can easily understand that bees disturbed at such a time must be impeded in their work, and a bee-keeper having a large number of hives would naturally suffer some loss. We do not see that there is any necessity for meddling with bees at such times, and the inspection can just as well be made either before or after the harvests so as not to interfere with the work in supers. It is, therefore, satisfactory to find the proposal was made that a friendly conference be held between the bee-keepers and the Department of Agriculture with a view to changing the regulations and limiting the inspections to more suitable times. We do not see why the wishes of bee-keepers should not be acceded to in this respect, and are pleased to find that the case was adjourned for two months to allow of the conference taking place.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on November 17 at 11, Chandos Street, Cavendish Square, London, W. Col. H. J. O. Walker presided, and there were also present: Messrs. C. L. M. Eales, A. Richards, E. Garcke, J. B. Lamb, R. T. Andrews, G. H. Skevington, T. W. White (Essex), F. W. Watts (Beckenham), and W. Herrod (secretary).

Letters expressing regret at inability to attend were received from Mrs. E. Chapman, Messrs. T. W. Cowan, W. F. Reid, T. Bevan, O. R. Frankenstein, J. Grimwood, G. W. Avery, Dr. Elliot, and the Rev. H. R. N. Ellison.

The minutes of the Council meeting held on October 6 were read and confirmed.

The following new members were elected: Rev. P. W. G. Filleul, The Rectory, Devizes; Mr. J. L. Brierley, Astwood Cemetery, Worcester; Rev. G. E. H. Pratt, Sheinton Rectory, Shrewsbury; Mr. C. J. Phelps, 81, Milton Road, Salisbury; Mr. E. Franklin, Burton Green, Kenilworth; Mr. J. Draper, Parr's Lane, Aughton, Ormskirk; Mr. C. W. Woodcock, 1, Street End Road, Broadoak, Sussex; Mr. J. Stoney, Haughton Hall, near Stafford; Mr. G. Mathie, Cape Town, South Africa.

The report of the Finance Committee was presented by Mr. G. H. Skevington. The receipts for the month of October amounted to £11 17s. 7d. and payments to £21 13s. 6d., leaving a balance in hand of £99 3s. 1d. It was resolved that payments be made amounting to £74 17s. 9d.

It was proposed by Mr. Eales, seconded by Mr. Skevington, and carried, that as Consols do not appear to be a good investment for the W. B. Carr Memorial Fund, the execution of the resolution dealing with that matter be brought forward at the next Council meeting.

Two candidates presented themselves for the lecturing test for first-class certificates, but neither succeeded in satisfying the Council as to his abilities.

After some discussion Mr. J. B. Lamb gave notice that at the next meeting of the Council he would move: "That it is desirable that arrangements should be made for a full consideration of the regulations under which certificates of proficiency in bee-keeping are granted by the Association."

The next meeting of the Council will be held on December 15.

ST. ALBANS AND DISTRICT B.K.A.

FIRST ANNUAL SHOW.

The above association held its first honey exhibition, in connection with the St. Peter's Chrysanthemum Society's show, at St. Albans on November 9 and 10. Mr. W. Herrod acted as judge, and made the following awards:

MEMBERS' CLASSES.

Six 1-lb. Jars Extracted Honey.—1st, W. H. Tompkins; 2nd, E. C. Berry; 3rd, W. Blow.

Twelve 1-lb. Jars Extracted Honey.—1st, E. Watson; 2nd, W. Perkins.

Six 1-lb. Sections.—1st, W. Sheppard; 2nd, E. G. Porter.

OPEN CLASSES.

Single 1-*lb. Jar Extracted Honey.*—1st, R. Hawkey, Bodmin; 2nd, A. C. Jackson, Thetford.

Single 1-*lb. Section.*—1st, G. W. Bullamore, Albury, Herts; 2nd, Piper and Son, Redbourne.

Though the entries were limited, the honey staged constituted an encouraging beginning, especially after such an adverse season as has just been experienced. —(*Communicated.*)

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

EXPERIENCES WITH THE "WELLS" SYSTEM.

[7972.] The answer to "Selcor" (page 452) regarding the above in B.B.J. of Nov. 10 will, no doubt, disappoint him a little; but the advice was doubtless the best that could be given for the reason assigned—viz., that it had proved to be a failure even in experienced bee-keepers' hands. The following brief experience of my own when trying this system may be of interest to your correspondent and other readers.

I had a splendid stock of British bees at the end of the honey season of 1907, into which I successfully introduced a valuable queen. In the following spring, when examining the stock for the first time, I found that it had contracted foul brood. I commenced at once treating it with Izal, dosing everything well with it, besides putting it into syrup with which I fed the bees. I worked on all the summer in this way, but made no impression on the disease.

I then determined to get a "Wells" hive, and put the bees into it, on clean comb and stores, on one side of the perforated dummy, and a lot of driven bees in the other end of the hive, expecting that their mutual warmth would enable them to winter all right.

In the following spring I found, instead of both lots being close to the perforated dummy, they were at the opposite ends of the hive, and all dead. I burnt everything in connection with the hive, disinfecting the latter, and decided to give the "system" a further trial.

In the spring of the present year I had two stocks which were not doing so well as I could wish, so I transferred them into this "Wells" hive, thinking that the two weak stocks would give me a super or two of honey, as they all worked together in one rack above the indispensable excluder-zinc. I did not get much honey from them, but this is not what I complain about, for poor queens are not much good in an apiary.

During the summer I noticed one side of the hive becoming stronger in bees, while the other side grew weaker, but never for a moment dreamt that there was anything the matter with the hive, attributing the unequal division of the bees to their fancy for a particular queen. I took off what little honey there was, and decided to re-queen them both. I set about to find the queen in the largest stock, but failed to discover her after a good search, owing to the great number of bees on the combs. I said, "Surely this must be a good queen when there are so many bees," forgetting that the stock had given me no honey to speak of.

I left this lot, and sought for the other queen, which I soon found, and replaced her with a good young queen from the South of England. But when I went to look if she had been accepted at the orthodox time I found her lying dead at the entrance of the hive.

Now comes the secret cause of all my trouble, for on examining the perforated dummy I found a hole had developed at the bottom of it large enough to admit the entrance of one bee at a time; so I am worse off than ever, for I have only one queen in the hive—an old one—and my young valuable one the bees have killed.

Perhaps with good queens and a sound dummy-board I might have succeeded, but I think the system is too unreliable and uncertain, and it will not pay to throw away valuable seasons experimenting when other methods without any risk of loss have appeared from time to time in the B.B.J.—H. J., Hexham.

HOW BEES CLEAN THEIR ANTENNÆ.

[7973.] In Mr. D. M. Macdonald's article (page 453) in your issue of November 17 I notice he states that in cleaning the antennæ the bee "deftly draws the right antenna through the *left* pecten, and vice versa." The italics are mine. Might I ask Mr. Macdonald if he has ever seen a bee do this, or if it is possible for a bee to clean its antennæ in this manner? I have at various times carefully watched bees for the purpose of ascertaining the manner of using the pecten, and they have invariably cleaned the *right* antenna with the *right* pecten, and vice versa. In fact, I have seen them clean both antennæ simultaneously. The legs are alternately passed over the head

from the back down the front, which may have given rise to the idea that the antennæ were being cleaned as stated by Mr. Macdonald, but this action appears to me to be solely to clean the eyes.

When watching the bees I have also noticed a peculiarity about the drone's method of cleaning the eyes. Every drone before flying from the alighting-board makes an elaborate toilet, both antennæ and eyes being thoroughly cleaned, the process of cleaning the antennæ being as follows: The right one was firmly grasped by the right pecten, and the head pulled and held to the right side; the left eye was then carefully brushed with the left leg, and vice versa.

Experts and Bee-diseases.—Experts have at various times and by various writers been charged with spreading disease of different kinds, but a more vague charge of this description than that of "A Cottager Bee-keeper" (7970, page 457) I have not read. We are told that an expert overhauled a couple of stocks, and some time afterwards they died; another apiary of thirty-six stocks was also overhauled by him, with the like result. Your correspondent does not say what length of time elapsed between the visit and the death of bees, or if it was known whether the expert had just previously examined diseased stocks; and he also admits he does not know why the bees died, and yet he infers that their death was the result of the expert's examination. Perhaps "Cottager" has a grain of superstition left, and thinks that the expert had an "evil eye" or bewitched the bees. May I be allowed to inform him also that it is possible to rid an apiary of foul brood? But he should know this if he has *read* the B.B.J. since 1873. He surely does not suppose that those bee-keepers who are advocating foul-brood legislation are so foolish as to ask for powers that would be absolutely useless if foul brood was incurable.

It would be interesting to know when an "expert" (?) who did not know foul brood obtained his certificate. I should say he would be about as useless on tour as one who could not tell how to drive bees out of a skep or box if he was asked to do so.

I wonder if "A Cottager Bee-keeper" ever visits shows or looks at the lists of awards so often published in B.B.J. If he does, he certainly does not know the names of those who are "experts," or he would know that they are very much in evidence not only as exhibitors, but also among the prize-winners.

There are certainly many cottager, or, more correctly speaking, working-men, bee-keepers who keep their bees in first-class condition. At the same time, in my experience as a travelling expert in various counties during the last ten years, I have seen the apiaries of working-men in a shocking condition; and I have also seen both types among what "Cottager" calls big bee-keepers. I have no hesitation in saying that the cleanest and best-appointed apiaries I have visited were owned and managed by ladies and retired Army officers, the latter being models of cleanliness and orderliness (with one exception).—J. Herrod, Sutton-on-Trent.

BEE-KEEPING EXAMINATIONS.

[7974.] Your correspondent G. W. Judge (7961, page 448), writing on this subject, argues that because there are skeps there must be men with certified ability to drive them.

I believe this to be false logic, for, as appears later in the letter referred to, if not driven, the bees from these skeps "would in the ordinary course be destroyed."

Now this is just what all sensible bee-keepers desire, provided, that is, that the alternative to destruction is transference to another skep. And that this is most probable may be gathered from Mr. Judge's remark as to skeppists "who will not entertain modern ideas of bee-keeping." I can imagine one of this school answering all appeals for better methods by the, to him, conclusive argument, "If these new-fangled hives be so good and my old skeps be so bad, how comes it that the B.B.K.A. won't certify a man as a proper bee-keeper till he can work skeps same as t'other sort?" And, from a practical point of view, why should he make any effort to change his bad methods when so much is done to make the skep system as profitable as possible for the honey-producer?—though no amount of "expert" advice can make it anything but uneconomical, selfish, and unsafe.

Mr. Judge says that an expert without practical experience would be likely to find himself in difficulties when called upon to drive bees, and with that opinion I heartily agree. But my contention is (page 429) that "practical experience" is just what an expert from a non-skep district must necessarily lack.

On the other hand, a man who has attained to a thorough knowledge of bees' habits and diseases, and who can manipulate a bar-frame hive to the satisfaction of his examiner—an art not to be learnt in a day or "crammed" up for a special occasion—could soon acquire whatever extra skill may be necessary to drive bees when he finds himself among a sufficient number of skeps to make it worth his while.

In short, the certified, though possibly quite inexperienced, "driver" might be

replaced by the certified "bee-expert" who might or might not have a local reputation for "driving," but who would certainly carry no authority, either express or implied, from the B.B.K.A. for the performance of that operation.

After so much criticism it is with sincere pleasure I congratulate you, the author (Mr. Hayes), and also myself—in anticipation of future benefits—upon the introductory article dealing with the microscopic investigation into pollen identification and sources.—H. READER.

[7975.] Your correspondent H. Reader (page 448) seems anxious for opinions regarding bee-driving as one of the subjects in experts' examinations, and in reply I should like to ask if he can answer two questions: 1. What is an expert? 2. What is required of an expert apart from the examination? My boy, aged nine, can handle bees and bar-frame hives, spot the queen, and from his school composition give a fairly accurate account of the theory of bee-keeping, with diseases. I ask, is the lad an expert?

My advice to your correspondent is to read the "Guide Book," with its very plain description of bee-driving, and if he has not common-sense to drive bees afterwards he is no *master* bee-keeper of even a bar-frame hive, let alone bees under difficulties.—H. J. M. (Expert, B.B.K.A.), Radstock.

BEE-KEEPING AND THE KENT C.C.

[7976.] With reference to "A Murmur from Kent" (page 420) and also 7963 (page 449), may I be allowed to say the murmur is perfectly justified? That such a large sum of money should be wasted annually by the Kent County Council on so-called bee-keeping instruction is outrageous. In the first place, I understand the instructor is allowed to arrange his classes when and where he desires, of course consulting his own convenience. What other County Councils would allow this?

Secondly, will Mr. Nash or anyone else give us the average attendance at these classes throughout the county for one year? I have it on good authority that it does not exceed six. Again, to get anyone at all to attend these classes a bribe of prize-money has to be held out. Before a person can exhibit he must have attended a certain number of classes. There are a few who attend the requisite number only, year after year, simply to qualify for prize-money, yet the idea is to encourage "beginners." Will Mr. Nash give us a list of the exhibitors and prize-winners for the last three years? It would be interesting to see how many new names appear. How often is instruction on diseases given, and is it efficient? I am certain that at least 60 per cent. of the stocks in Kent are diseased. This ought not to be the case with so much money expended on instruction. Is it not also true that at least two small associations in Kent have become so disgusted with the lectures provided by the authorities at Maidstone that at their own expense they have engaged the services of the lecturer to the B.B.K.A.? The other night I had the pleasure of hearing him lecture on diseases for the Mid-Kent B.K.A. at Maidstone. I have never heard the like before, and must say if we had a few more such lectures in the county, brimful of useful, practical information given in a simple, straightforward, and convincing manner, disease would soon be considerably reduced.

Considering the possibilities of bee-keeping in Kent, it is a standing disgrace that there is no county association. That interest on the part of the ordinary bee-keeper is not lacking is proved by the number of small associations dotted here and there. The late association died insolvent through mismanagement, and I know that upon the resignation of Mr. H. W. Brice, the then travelling expert, Mr. W. Herrod offered to take on the work (and who was better suited, as he knew the whole of the members?), yet for some unaccountable reason his offer was ignored. I have a suspicion it was thought *infra dig.* to allow an ordinary expert to become secretary, but to-day he is showing his ability for this work, not as a mere county secretary, but of the head Association. Had his offer been accepted the Kent Association would probably have been flourishing at the present time. That a secretary could be found and a county association formed I am quite sure; but if another attempt is made let it be on broad business lines, without fads, with a representative committee of practical bee-men, and not a one-man affair as in the past. Then, and not till then, shall we succeed.—MAN OF KENT.

[7977.] There seems to be a growing desire to start an association again in Kent, and as I have many old friends there, and still own an apiary in that county, I shall be pleased to help all I can in the work. If those who are interested and would like to assist in forming an association again will communicate with me, I will do all in my power to assist in starting one again, for the sake of old times.—W. HERROD, 23, Bedford Street, Strand, London.

(*Correspondence continued on page* 468.)

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

The interesting apiary illustrated on this page is one which deserves more than a passing notice. It belongs to Mr. James Henry, miner, Egremont, Cumberland, and took first prize as the best-kept and most successful apiary in the county for the current year. The silver cup awarded is to be seen on the top of hive to Mr. Henry's left. Both judges had no hesitation in deciding as to the destination of the cup after visiting all the apiaries entered for competition. When it is remembered that Mr. Henry is a working-man, spending a long day down in the pit, that he makes his own hives—well-finished work they are too—and that his average is so high as 120 lb. in this generally medium year, it speaks eloquently of his ability and enthusiasm. On the show-bench he secured a v.h.c. and reserve not only in the local but also in a very strong competition in the open classes, which shows he can "grow" good honey. Further, he can sell his honey well, as is proved by his obtaining 1s. per lb. in a county where a good deal changes hands at 8d. Mr. Henry is therefore a successful all-round man, and proves in his own person that bee-keeping pays, and pays well; also he is evidence that the working-man can hold his own when a proper enthusiasm leads him on to an intelligent prosecution of his beloved hobby. Mr. Henry has kindly supplied the following notes, which are well worthy of being carefully read and studied:

"I commenced bee-keeping in June, 1905, by purchasing a swarm for 5s. This was hived in a single-walled hive I had made two years before in anticipation of getting a piece of ground where I could stand a few stocks. It was by no means my first interest in bees, as my father had kept them for a number of years, and I was often called upon to give him a helping hand: but as we lived about four miles apart, my enthusiasm was never really roused until I possessed this swarm. Then I could see the things my father should have done, but which were left undone, the result being that I took off sixty-three sections, and two frames full of honey out of the brood-body, making altogether about 70 lb.; this, I think, established my name as a bee-keeper around here. At this time I was often invited to look through other people's hives, and by the end of the season I had collected a quantity of old drone-comb and combs out of skeps, which were supposed to be useless, but when I had finished with them I had a 7-lb. cake of wax, which I sent away to be made into foundation. When my father brought his bees from the heather he made me a present of another stock, so my bees did not cost me a great deal at the start, nor have they done so since. I make all my own hives and appliances (excepting frames and sections) out of boxes that contained dynamite. My hives are of the 'W.B.C.' pattern, every part interchangeable—an advantage I greatly appreciate. Each cost about 2s. to make—not an extravagant amount when every hive contains two brood-chamber boxes, each to hold ten frames and dummy, one shallow-frame box, same width, two sec-

MR. J. HENRY'S APIARY, EGREMONT, CUMBERLAND. AWARDED FIRST PRIZE, 1910.

tion-racks, with floorboard, outer cases, and roof to cover all. My section-racks are double-walled, the space between being filled up with cork dust; this does away with all packing material around the supers, and as the sides are over 2 in. thick, they are the snuggest and warmest part of the hive. As I go in for doubling, you will see the advantage I have in such racks when it becomes time to confine the queen to the lower chamber and I wish to run the hive for sections. I have simply to lift the top chamber up, after seeing that the queen is in the lower one, place the section-rack in position, replace the top chamber, and in ten days' time, when all the brood is sealed, I can either form nuclei or do with the extra brood-frames whatever I desire. For quilts I have a framework of wood 1½ in. thick, with a feeding-stage placed in the centre. This framework is covered on the under-side with carpet, on the top with calico, and the inside filled with cork dust. For feeders I use the ordinary 1-lb. honey jars. These can also be used in the winter for putting candy in if necessary. When spring comes, all that is required is to fill up with syrup, screw on the cap pierced with a hole or two, and when inverted over the feed-hole in quilt they make grand feeders at a very small cost. For 1¼d. you have a feeder that will last longer than either wood or tin, keep sweeter and cleaner than either, and with no fear of syrup running out. Of course, in making my hives I do not reckon my time and labour, as they are all made in my spare time. As I follow the occupation of a miner, bee-keeping is a grand out-of-door hobby, and a paying hobby, too, I find it.

"I have never had more than four hives in any season. Up to this year I had sold £12 10s. worth of honey, besides supplying ourselves. This year I shall clear about £15, as it has been a record around here, my average being about 120 lb. per hive. I have always got 1s. per lb. up to this year, but as the market has been full it will average 10d. per lb. My advice to all bee-keepers is to set themselves an ideal and go in and attain it. The ideal I set myself was to find out a system suitable for my district whereby I could keep a given number of stocks, control swarming, and secure 100 lb. of honey per hive. I have not fully satisfied myself on these points as yet, but I am quite pleased with results so far. As to the bees themselves, I pin my faith to the good old 'blacks.'

"I have explained my methods rather fully, but my object is to show working-men bee-keepers how they can get up a good stock of hives and appliances at very little cost. The advice given by Mr. W. Z. Hutchinson, and repeated by "D. M. M." in the B.B.J. some time ago, is, to my mind, worth remembering: 'Read all you can about bees, but do your own thinking.' If all accepted this there would be little doubt of an affirmative answer to the question of 'Do bees pay?'"

(*Correspondence continued from page* 466.)

BIBLE BEES AND HONEY.

[7978.] In the B.B.J. of November 3 (page 438) Mr. D. M. Macdonald, in his interesting article on "Bible Bees and Honey," tells us that the last food Christ partook of on earth was a piece of broiled fish and an honey-comb (Luke xxiv. 42). May I say that in the "Twentieth-century New Testament" the verse reads: "They handed Him a piece of broiled fish, and He took it and ate it before their eyes"; and the Revised Version is: "And they gave Him a piece of a broiled fish, and He took it and did eat before them." What I wish to point out is that the honey-comb mentioned in the old version is a kind of cake or bread which is eaten in the East with broiled fish. May I quote from J. Gadsby's "Wanderings in the East," vol. 1, page 459: "The honey-comb in Song v. 1 and Luke xxiv. 42 means honey-comb bread—something like our crumpets. The former means honey-combed bread saturated with honey instead of butter, and the latter simply bread and fish." The noun was understood as in many other cases. See Song of Solomon vii. 7, where "grapes" should read "dates," the palm-tree being referred to. In vol. 2 of his book Gadsby says: "Only think of broiled fish with honey-comb!" I have in my possession a cake which answers the description, being indented all over, which I brought from Jerusalem; and bread and honey are often enough eaten together, and much relished.

I very much enjoy reading all Mr. Macdonald's articles in B.B.J., and hope he will forgive me if I differ from him in this case, as I feel sure Gadsby is right, and the old version means bread. I should also like to refer Mr. Macdonald to Job xx. 17, Isa. vii. 15.

I trust we shall have more such articles from his pen.—C. Reed, Third-class Expert, Essex.

THE BEE-PEST PREVENTION ACT (IRELAND).

FIRST CASES IN THE COUNTY WEXFORD.

At Clonroche Petty Sessions on Friday, November 4, the first case in the county Wexford under the new Bee-Pest Prevention Act came on for hearing. The plaintiffs were the County Council of the county Wexford.

As will be seen, the cases were ad-

journed pending a conference between the bee-keepers and the Department of Agriculture with a view to having the regulations altered.

The first case was against Mr. M. J. Stephenson, Adamstown. Mr. Stephenson was summoned for that he, the said defendant, on July 3, 1910, at Adamstown, in said county and district, did unlawfully refuse to allow Mr. P. F. O'Byrne, a bee-inspector duly authorised in writing by the complainants as local authority, to enter the defendant's premises and inspect the bees kept there.

Mr. M. J. O'Connor, solicitor, Wexford, appeared for the defence.

There was a similar summons against Mr. P. Doyle, Kellystown, Adamstown.

Mr. O'Connor, for Mr. Stephenson, said that his remarks would apply to the two cases, that against his client and that against Mr. Doyle. It appeared that there was a considerable increase in the honey industry in Ireland, and his client was one of the largest honey producers in Ireland. This summons was brought under what was known as the Bee-Pest Prevention (Ireland) Act, section 2 of which provided: "That any officer of the Department of Agriculture charged with agricultural duties and authorised in writing in that behalf by the Department, and within the district of any local authority, and authorised in writing by that authority, shall have power to enter at all reasonable times any premises where bees are kept, and to inspect any bees and articles and appliances used in connection with bee-keeping." It would appear from that section that the bee-inspector was to come "in reasonable time." Under the Act the local authority (the County Council) should make regulations as to how the Act was to be carried out. The definition of "reasonable time" was (according to the regulations drafted by the Department) taken to mean "any time between April 20 and October 31 inclusive, when bees are flying on the premises, and when weather conditions are favourable." The point in dispute was whether the "reasonable time" was between April 1 and October 31. They (defendants) contended that it was not a reasonable time at all. The two defendants were two of the largest bee-keepers in Ireland. His client, Mr. Stephenson, made a net profit of £152 17s. out of honey this year. The two gentlemen from Adamstown sold more honey last year than any two counties in Ireland. It would be a serious loss to his client if a bee-inspector could come in when his bees were making honey. The defendant calculated that the loss on his ninety-nine hives for three or four days of lost honey-making would be about £19.

Chairman: Does the Act fix the time?

Mr. O'Connor: The regulations of the Department of Agriculture fix the time, but we hold that the regulations should be changed. The Bee-keepers' Association had taken up the matter, and were sending a deputation to the Department of Agriculture to suggest that the period for inspection be changed. He would, therefore, suggest that the cases be adjourned till the deputation had waited on the Department. Their contention was that bees should not be inspected or disturbed in "clover" districts from June 1 to August 20, and in "heather" districts from June 1 to September 15. This would leave ample time for inspection. In "clover" districts they could inspect bees from April 1 to June 1, and again from August 20 to October 31, and in "heather" districts they could be inspected from April 1 to June 1, and again between September 15 and October 31. They now suggested that a friendly conference between the bee-keepers and the Department be held. If the Department could not see its way to change the regulations they (the defendants) would give an undertaking not to raise any technical points. He would, therefore, ask their Worships to adjourn the cases until they saw what could be done.

As no one raised any objections, the cases were adjourned for two months.

B.B.K.A. LIBRARY.

AN APPEAL TO READERS.

To make the library as complete as possible, will any bee-keeper having bound volumes of the reports of affiliated associations for the following years kindly give them to the Association? Any volume previous to 1884; also volumes for 1889, 1891, 1892, 1893, 1897, and 1904 are wanted.

I would also again remind members and friends that I have not yet received sufficient funds to pay for the bookcases, &c., and that their prompt help in this matter will be much appreciated.—W. Herrod, Secretary, 23, Bedford Street, Strand, London, W.C.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Marking a New Location.—To secure that bees remain where they are put down after uniting, *Gleanings* says: "The chief point is that they should be 'shook up' thoroughly. Simply give the bees of the colony about to be removed a good smoking. When moved, again blow in considerable smoke at the entrance of each hive and pound vigorously on the sides

with a stick. This will cause the bees to fill up, and when they fly they will mark their location. We recently shifted twenty colonies to a new location in the same yard, and had no loss of bees." This demoralising of the bees by vigorous pounding is just another form of bee-driving practised in this country. If a frame-hive undergoes the same process by shaking each frame and letting bees run in on the new stand the same results follow.

Cui Bono?—Can we eliminate the swarming impulse? Can we regulate the mating of the queen? Can we by accomplishing the last work towards the first? are questions agitating American bee-keepers. One writer actually advises us to read Genesis xxxi. 30-43, as if that would solve the riddle. Why, we have too many Jacobs as it is, all breeding for *colour* irrespective of any other trait in the bee. Any ninny can breed for colour, but what benefit apiculture can derive from securing this end puzzles me to determine. Why should "natural selection" be objected to in a well-regulated apiary?

"Review" Editor Ill.—The sympathy of readers of Mr. Hutchinson's paper and of those who have read his book, "Advanced Apiculture," of which a new edition is in the press, will go out to him in his serious illness. He has been in hospital for some time, but latest accounts showed a welcome improvement. The *Review* has an individuality all its own, and its genial editor is the heart and soul of that creation.

Safe Wintering.—In October issue the leading article is devoted to outdoor wintering-cases. Four hives are grouped back to back, entrances facing east and west. The photograph shows them covered by one large roofed case, so large that 5 in. of packing material separates each hive, and the same is placed above. Mr. Bartlett, who lives in the "snow-belt of Northern Michigan," says: "With this system of packing there will be no condensation of moisture in the hive, the quilts and coverings will be bone-dry, the frames of comb and honey will come out bright in nearly every case, and any colony that is in shape to winter anywhere will come out 'O.K.'"

Another article deals with cellar wintering, and Mr. E. S. Miller, the writer, claims that it will never fail. In brief, it consists of (1) a cellar all underground, (2) the top frostproof, (3) the ceiling tight, airtight if possible, (4) a sub-earth ventilator 50 ft. long for admission of pure air, (5) another sub-earth shorter ventilator for the exit of foul air. The editor, instead of having his ceiling airtight as above, ventilates his cellar by a 3-ft. opening in the ceiling, which he shuts or opens as he deems is best, judging by temperature.

Exit Box-hives.—The *Australian Bee-keeper* has the following about the New Zealand Act: "Two persons have been prosecuted and fined for failing to transfer bees from box- to frame-hives. These were the first cases under the Act, and the fines were light, only 1s. and 5s., but they are sufficient to deter others from ignoring the Act." The enforcement of this clause, drastic though its terms are, has been mildly carried out, time being judiciously given for properly realising its benefits. Bee-keepers then look upon its requirements as perfectly justifiable, and are systematically dropping these awkward and inefficient homes of the bees. Enforcing the clause, therefore, is not looked upon as a hardship, but a very real benefit. Here is one other sentence quoted for the special benefit of those "much-afraids" who can see only evil in a Bee-Diseases Act: "Since the Act came into force it is wonderful how bee-keepers have pushed their business ahead."

Stencilling Hive-numbers.—The same paper gives the following hints on painting hive-numbers: "Prepare paint thus: Table-spoonful of vegetable black, linseed-oil to make a thick paste, a few drops of varnish or turpentine (gold size is better than varnish). Place the stencil in position. Dip a short-haired brush in the paint and rub on a board until nearly dry, then dab over the apertures, and your number is completed. If the brush has too much paint, the edges will be blurred, therefore have the brush almost dry and you will have a clearly painted edge."

Thick and Thin Walls.—Mr. Arthur C. Miller still keeps up his bee-keeping, and I was pleased to see an article from him in October *American Bee Journal* dealing with various subjects. I select two. "In winter thick walls keep bees cold, not warm, and often prevent the escape of moisture, particularly with a small entrance. In the spring and fall, and in cool summer nights, common in some places, the thick walls are a help."

"Bees to properly conduct their work must be kept warm. If the temperature of the air drops they gather more and more compactly, leaving the supers and clustering on the brood. If you understand the law of wax-production you will see the loss. Protection, then, by double walls and wrappings pays." Heathermen will appreciate the truth of both statements.

Italians v. Blacks.—The venerable Dr. Bohrer, after seventy-five years' acquaintance with blacks and fifty years with

Italians, sums up an impartial review of his experiences with both races: "The only difference I note in favour of Italians is (1) they remain on the combs while they are being handled, while blacks drop off on the ground, and (2) Italians defend themselves much more successfully from moths." To the first I answer that our blacks do not act as he mentions, although I own they do not stand so still as Italians. The veriest tyro has noted this; but I do not consider it a grave vice. On the second point I would assert that no colony of blacks in this country receiving a moiety of the attention they ought was ever afflicted seriously by the ravages of the wax-moth.

WEATHER REPORTS.

WESTBOURNE, SUSSEX.
September, 1910.

Rainfall, ·16 in.	Minimum on grass, 33° on 21st.
Below average, 2·04 in.	Frosty nights, 0.
Heaviest fall, ·11 in. on 14th.	Mean maximum, 64·7.
Rain fell on 3 days.	Mean minimum, 48·1.
Sunshine, 188·2 hours.	Mean temperature, 56·4.
Above average, 14 hours.	Above average, ·7.
Brightest day, 3rd, 11·5 hours.	Maximum barometer, 30·438 on 17th.
Sunless days, 1.	Minimum barometer, 29·864 on 29th.
Maximum temperature, 71° on 2nd.	
Minimum temperature, 39° on 21st and 24th.	L. B. BIRKETT.

WESTBOURNE, SUSSEX.
October, 1910.

Rainfall, 3·68 in.	Minimum on grass, 33° on 21st.
Below average, ·24 in.	Frosty nights, 0.
Heaviest fall, ·62 in. on 13th.	Mean maximum, 58·4.
Rain fell on 18 days.	Mean minimum, 47·8.
Sunshine, 81·9 hours.	Mean temperature, 53·1.
Below average, 40 hours.	Above average, 3·9.
Brightest day, 3rd, 8·9 hours.	Maximum barometer, 30·541 on 4th.
Sunless days, 6.	Minimum barometer, 29·568 on 20th.
Maximum temperature, 66° on 5th.	
Minimum temperature, 40° on 21st.	L. B. BIRKETT.

Queries and Replies.

[4057.] *Queen Laying in Super.*—I am sending you some worker-bees and also a dead queen which on October 27 were cast out of a strong stock of Sladen's "British Goldens" I purchased over two years ago. On August 2 this stock covered eleven frames and a super. Wishing to stock my observatory-hive for show purposes, I took three frames of brood and the queen out at 10 o'clock in the morning, and returned them at 7 o'clock the following night. About August 6, on taking off the super from a stock of black bees, I found the queen had gone up and started a patch of brood on the centre frame. Wishing to extract the honey from the super, I shook the queen and bees off in front of the hive, extracted the honey, and returned the empty rack to the stock of "Goldens," leaving the brood to hatch out, and placing an excluder in position. I then began to feed over the super, giving between 25 lb. and 30 lb. of syrup. The excluder was taken off for two or three weeks, but replaced, and the brood-chamber contracted to nine frames on September 24. On this date I noted the queen was all right in the brood-chamber. Wishing to try wintering with super in position, I took away the outside frames, leaving six frames in super with a good quantity of sealed stores, and packed down for the winter, placing a celluloid quilt on top. Up to date the super has been crowded with bees. I should be obliged if you could give me your opinion as to the probability of the stock being queenless. The workers forwarded vary in colour. Are they the progeny of the queen enclosed? I noticed the light-coloured bees fighting the darker ones. Do you think they raised a queen in the super from the brood of the black stock, and the darker bees are her workers, and that they "balled" the original queen? An early reply in B.B.J. will greatly oblige.—W. H. F., Leicester.

REPLY.—The queen sent has become very dry, so it is difficult to say if she is a virgin with certainty. She looks like a very young queen, and it is just possible that during the time the queen was away in the observatory-hive the stock commenced queen-cells, and after this queen hatched out she was killed. In that case the old queen will be all right. The workers are of two kinds, pure Italians and hybrids. The latter were no doubt trying to rob the hive, which accounts for their presence.

[4058.] *Preventing Swarming.*—As a regular reader of the B.B.J., may I ask, through your paper, one or two questions, your answers to which would not only be appreciated by myself, but would settle difficult points for all novices? 1. What objection is there to using *shallow* frames in the brood-chamber with another shallow body below to prevent swarming? Americans contend that by this method more honey is stored above. 2. Does the clipping of the queen's wings interfere with her laying qualities in any way? 3. Can

a swarm issue from a stock deprived of all queen-cells? 4. Is there much risk of a stock of Carniolans swarming provided a non-swarming chamber is used below, and the stock is carefully examined each week to make sure no queen-cells are being built? 5. Are Carnio-Italian bees *very* gentle, or do you advise pure Carniolans or Italians for good disposition?—W. Bee, Yorks.

Reply.—1. The method was tried a few years ago, to be discarded by all practical bee-keepers. One great objection is that the combs get very dirty: another the brood-box has to be constantly moved to get at the frames, and it has been found that swarming is not prevented. 2. No; but we do not advise the practice. 3. If a stock has eggs or larvæ not more than three days old the bees can rear a queen. 4. It would go a long way to prevent swarming, but most foreign races are inveterate swarmers. 5. Hybrid bees of any description are, as a rule, vicious. Pure Carniolans would be the best. But why not stick to British bees; they cannot be beaten?

Notices to Correspondents.

Inquirer (Greenock).—*Lantern-slides, &c.*—1. Lantern-slides can be hired from the British Bee-keepers' Association. 2. We know of no book treating specially of artificial fertilisation of plants. The best book on "The Fertilisation of Flowers" is by H. Müller, published by Macmillan and Co. "Mendel's Principles of Heredity," by W. Bateson, should be studied if you wish to understand the principles of hybridisation. 3. "The Hymenoptera-Aculeata of the British Isles," by E. Saunders, is the most complete book on British wild bees. 4. Rhododendrons are indigenous in several countries, and the new cultivated hybrid varieties have been produced by artificial fertilisation and crossing *R. ponticum* with some of the other species and varieties. 5. Bees work on common fly-honeysuckle (*Lonicera xylosteum*) and sometimes on red clover. On second-crop clover the tubes are usually shorter, which enables the honey-bee to reach the nectar. 6. Sometimes they work at the perforations of the corolla made by *Bombus terrestris*. 7. Yes. We are not certain who was the first to introduce humble-bees into New Zealand, but believe it was the Rev. W. C. Cotton, about 1842. 8. Worker-bees have been known to sting through the thin chitine between the rings and withdraw the sting.

J. F. A. (Northam).—*Disinfecting Combs.*—1. The treatment is the best that can be done, although it does not disinfect the combs entirely from the germs of foul brood. 2. The germicide can only be of use in preventing the spores from germinating or in arresting the increase or growth of the bacilli. If you will read the instructions in "Guide Book" carefully, you will see that you have to depend on the feeding in conjunction with spraying the combs, which are returned to the hive.

H. G. C. (Fortis Green).—*Storm-doors, &c.*—1. Judging from the photo of your apiary, there is no need to use storm-doors, as the protection afforded by houses and trees will be quite sufficient. 2. The honey sample is of good colour and flavour; it is rather thin. It has been gathered from mixed sources.

H. E. S. (Oundle).—*Plague of Wax-moth.*—Do not use split-top frames, kill all the grubs you see, and if you run a fairly hot flat-iron over the quilts the eggs will be destroyed. Have you tried "Apicure" in the hives?

J. W. B. (Rochester).—*Bees Leaving Hive.*—There is no disease in the comb; the cells contain hard pollen only. The swarm evidently deserted the hive as they were starving, and sought a home better provided with food.

E. C. G. (Nantwich).—*Candy Becoming Hard.*—If the candy is hard the bees cannot eat it, and we should advise replacing it with a cake of properly-made soft candy. Pea-flour should not be added till about February; the flour is not used as a medicament, but to supply pollen should none be in the hive.

E. J. J. (Brighton).—*Using Old Combs.*—It would be false economy to try to clean and use the combs. The best plan would be to melt the wax and use new sections in the rack.

H. S. (Manchester).—*Moving Bees.*—It will be quite safe for the bees to travel by goods train at this time of the year if packed securely, and this is the method of sending them we should recommend.

G. M. (Hindhead).—*Suspected Disease.*—We regret to have to confirm your opinion that the bees have died from "Isle of Wight disease." We should advise you to destroy all the combs and internal fittings of the hive by burning, and thoroughly disinfect the hive.

Honey Samples.

H. J. (Hexham).—Samples should be sent in bottles perfectly free from taint. We regret we cannot give an opinion as to yours, as they are tainted with the smell of meat-extract which the box originally contained.

J. P. (Glam.).—The honey is quite pure, and is British so far as we can say, though not of first-grade quality.

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MR. GEORGE W. YORK.

We have much pleasure in presenting to our readers the portrait of Mr. G. W. York, who is better known as the editor of the *American Bee Journal*, one of the oldest bee-papers, which, having been established in 1861, is next year celebrating its golden jubilee.

George Washington York was born on February 21, 1862, at Mount Union, Ohio. He was educated at the college, and after completing his studies in 1882 he continued there for some time as instructor in penmanship, mathematics, and book-keeping. In 1884 he made the acquaintance of Mr. Thos. G. Newman, the editor at that time of the *American Bee Journal*, with whom he entered into an agreement to devote his time to the business of Mr. Newman and his son, Alfred H. Newman, who was carrying on the bee-supply trade, and for six or seven years he had two masters, but the experience he gained in both lines of business was invaluable in view of his subsequent commercial life. The services which he had to render ranged from sweeping out the office and washing the windows to reading proofs, setting type, and acting as shipping clerk and book-keeper. It was just the training to fit him for the position which he has so well filled in later years. His remarkable memory made him of great use to his employer, who could always depend upon him for any reference that had appeared in the journal; and in 1892 Mr.

MR. G. W. YORK, EDITOR, "AMERICAN BEE JOURNAL."

Newman wrote of him: "Step by step he advanced to positions of responsibility and confidence until, during our late and long-continued indisposition, he has had the entire editorial management of this journal."

It was on March 21, 1892, that Mr. York's name first appeared as assistant editor of the *A.B.J.*, of which he had the entire management during Mr. Newman's illness, and carried out his duties to the satisfaction of all parties, showing him to be the right man for the position of

editor. In May, 1892, Mr. York bought the journal, and had to go into debt for two-thirds of the purchase price, but by dint of perseverance in six years he was clear of this debt. During this time and up to six years ago he managed a large supply and honey business, and for several years he was the largest bottler of honey in the United States.

The *A.B.J.* was founded fifty years ago by Samuel Wagner, so that Mr. York has been connected with it for over a quarter of a century, and has edited and published it for just one-third of its existence. From January, 1881, to July, 1907, it was published weekly, and since that time it has appeared monthly, as it had done previous to 1881. Its form and general contents have changed considerably during late years from what they were in its earlier volumes, which, though a gold-mine of information, had not the variety that the volumes of recent years contain.

To edit and publish a journal in so able a manner as that in which Mr. York edits and publishes the *American Bee Journal* does not leave much time for bee-keeping; but notwithstanding he has for many years had a few colonies in his backyard, and the little time he has had to devote to them has been both pleasant and profitable to him. He has produced as much as 150 lb. of comb honey per colony in one season. One year he secured five three-frame nuclei of Italian bees before May 15, and by the end of the season he had taken 60 lb. of comb honey from each of the five (making 300 lb. in all) and increased the five to six strong colonies, with plenty of honey stores for the following winter. This shows what may be done with a few bees in a large city, for Mr. York's home is in Chicago.

We have known Mr. York for a great many years, and on every occasion when we have had the pleasure of meeting him we were charmed by his pleasing manner and his executive ability. In private life he is an active church-worker and prominent in the Sunday school, holding the office of superintendent for many years. He has had also the honour of being elected president this year of the National Bee-keepers' Association, and was for two years in succession president of its predecessor the North American B.K.A., which office he filled with the same characteristic faithfulness and energy that have marked his career as editor and publisher. In August, 1909, Dr. Miller, well known to the world of bee-keepers, joined him as associate editor of the *A.B.J.*, and with two such able men at the helm the paper is sure to continue its prosperous career. We wish Mr. York long life and happiness to pursue his work for the benefit of the industry.

AMONG THE BEES.

WAX-FOUNDATION.

By D. M. Macdonald, Banff.

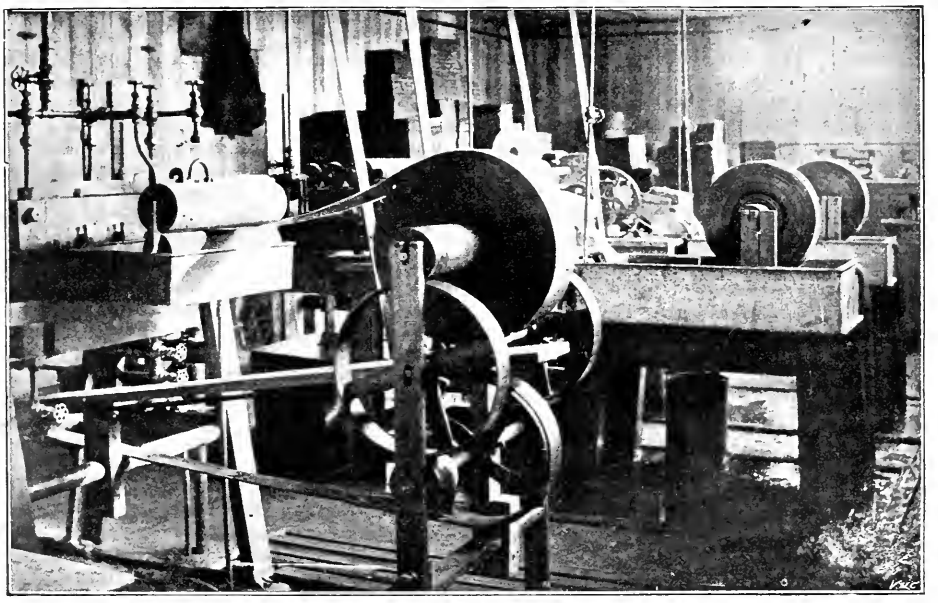
It was my recent good fortune to have an opportunity of seeing at Messrs. Lee's factory the whole process of foundation manufacture from the stage when the wax-cakes were delivered to the factory until the perfect sheet of foundation was automatically packed in piles ready to dispatch to the supply houses. The wax does not look a very tempting object as first seen, and at times a good deal of foreign matter has to be extracted; indeed, I was informed that in every consignment a considerable percentage has to be counted on as waste. British bee-keepers might be considered incapable of erring in this way, but they are special culprits, I fear, from the sample shown me. A large vat had just been cooled and inverted. One-third of the depth of the contents was a mass of cocoons pure and simple, nearly another third consisted of propolis and similar refuse, and only one-third of the depth was really pure wax, but it was marvellously pure. Out in the open yard stood huge piles of large cakes. One comparatively small stack was estimated to be worth £150. These came from almost all quarters of the world. I think Chili, Jamaica, and Australia were mentioned as among the sources. Ignorantly, I expressed my admiration at the purity of the foreign samples, but was soon undeceived when I saw the "raw material" before it had been purified. The very pronounced shades from deep yellow to almost pure white were very noticeable.

Cakes of several hundred pounds weight are treated like mere toys, being tossed into a great vat in the solid, but soon, under the influence of steam, they become liquid. How it takes place would be tedious to describe, but the great vat yields its contents to another receptacle, which permits a thin stream of hot liquid wax to run out evenly over, when, as if by magic, there appears a thin yellow band of solid wax running round a cylinder. The sheet is broader than the orthodox $7\frac{3}{4}$ in., but on winding it on to another drum the machine cuts off a band on each side, trimming it to the required size to a nicety. One unacquainted with the process would expect the immediate completion of the manufacture, but it appears that these huge rolls have to "mature," and so they are laid aside for weeks in a store-room. Those first stored are taken out and placed on the machine connected with the stamping process. This is simplicity itself when once it is seen; but I guess the long-headed Yankee who first perfected the "New 'Weed'" method devoted a good deal

of hard thinking before he devised the means for accomplishing this wonderful transformation, for it is little else. I stood wrapped in wonder at the marvellous feat. One moment there was a by no means inviting plain band of wax; the next instant, as if by some strange legerdemain, there was the doubly-impressed sheet of foundation cut and trimmed ready to become the base for the construction of 5,000 hexagonal cells, all marvels of perfection in their delicate construction. Thousands of these perfect sheets of foundation 13¼ in. by 7¾ in. were cut, impressed, and thrown in piles as if by the hand of an enchanter; and the beauty of it all is that the machine operates almost

At a bench in the work-room I had the pleasure of observing something like a sleight-of-hand process of folding frames, inserting the sheet of foundation, and wiring them in. The "embedder" was nothing less than a current of electricity. I had read of this being done, but seeing it was a marvel. The quickness of the action, the perfect beauty of the insertion, and the complete nature of the embedding were simply perfection. The work-room was a model of neatness and completeness, and the high finish and choice material used impressed me favourably.

In another room the deft fingers, with the soft and delicate neatness of touch, of the female workers confirmed me in my



WAX-FOUNDATION MACHINE AT MESSRS. LEE'S FACTORY.

mechanically, for, if the gauges and various checks and stops are set true, the mechanic is a mere spectator.

For super-foundation the process is very much the same, but, of course, the sheets are thinner and the wax finer, only the very choicest being employed in turning out this dainty tit-bit for the surplus-chambers. Messrs. Lee are most particular in securing wax of the purest kind for all their foundation, but only the choicest is used for supers, and every pound used is thoroughly tested for purity. All who use "Weed" foundation appreciate the neatness and daintiness with which this firm pack their product. After seeing the admirable process of manufacture in its entirety, I am more than ever prepared to urge the advisability of supporting "home industry."

opinion that for many features of bee-keeping the mere man is left far behind by the gentler hand of woman. The folding, lacing, and finishing of sections and section-cases were overtaken with almost lightning speed, and with such a high degree of finish as few of the most expert exhibitors could rival.

While everything seen was interesting, I think what impressed me most after the "Weed" foundation were the exquisitely-finished section-cases for show purposes, the use of which I should like to see enforced by show committees; the perfect embedding of the electric current, which left a frame admirably fitted to secure perfectly-built combs; and the neat and efficient style of finishing off hive-roofs in order to ensure that they shall be thoroughly watertight.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PIONEERING WORK IN APICULTURE.

FURTHER EXPERIENCES WITH BEES IN KASHMIR.

[7979.] Last year, in B.B.J. of September 16 (page 365), you inserted an account of my first experiences in apiculture in the Himalayas.

Kashmiri bees are migratory in their habits, and many colonies go up to the hills for the summer. I have seen them busily at work among the alpine flowers at a height of 14,000 ft. In the autumn, when it becomes cold, they again descend to the valley and enter one of the numerous bee-hives with which so many of the houses are provided.

Last year I suffered from this nomadic habit, for as the autumn came on all my bees left me, carrying with them the whole of their stores and leaving nothing but empty comb. This and the experience gained were the sum total of my first venture in apiculture. Probably, in spite of quilts and matting, the bees felt the cold more in the wooden hives than in the earthenware cylindrical boxes which are built into the walls of the houses, and to which they are accustomed. Indeed, the only colony which remained under my observation in the winter was a large one, which had hived itself in a space between the wall and the ceiling of one of our hospital wards. During the spring and summer this colony afforded an admirable illustration of the disastrous results of a habit of swarming.

This, which I will call my wild colony, began work on February 20 last, bringing in large quantities of willow-blossom pollen. It gave off its first swarm on April 25, and between this time and May 9 six more swarms or casts issued from the same hive. Of these swarms, unfortunately the first flew away and was lost: two we managed to capture, and joined together and obtained a fairly strong hive; a fourth cast was hived, but on the fourth day a band of black ants ½ in. long invaded the hive and massacred a large number, biting off their heads with their powerful mandibles. The rest of the colony, panic-stricken, at once abandoned the hive. A fifth cast was hived, and worked for a month, when it was set on to by robber-bees and fled, deserting a square foot of brood-comb. A sixth cast bolted within a few days, and a seventh on the twenty-third day. The original colony was now very small. I opened up the ceiling on June 16, and found eight brown and rather ragged combs, which had evidently been attacked by mice; there was also some brood and a little honey. On September 12 the remnant of this once flourishing settlement deserted its home, but I caught the swarm and joined it successfully to the second and third casts, and the stock is now working well. I am taking no honey from it this year, and hope that with careful feeding and protection from the intense cold of the winter it will do good work next season.

As I have said above, last year I suffered from the migratory habit of the bees, but this year I profited by it, as a large swarm of yellow bees hived itself in one of my empty Kashmiri earthenware cylindrical hives early in May. On July 16 it seemed very crowded, so I fixed on a basket, in the roof of which I had placed a strip of foundation. This basket I sealed on to the back of the hive with potter's clay. On October 11 I removed it, and found that combs had been built on to and parallel with my foundation, and I obtained a good supply of honey.

Before this swarm arrived, on March 24 I obtained an ordinary Kashmiri hive with a fairly large population, which worked well during April, and on May 18 gave off a large swarm. This was difficult to hive. Evidently the bees were puzzled by the unfamiliar frames and arrangements of an English hive, and they all crawled up into the roof, and had to be shaken down. I put queen-excluder across the entrance for ten days and then removed it. In June the bees were entering the hive at the rate of forty a minute (even in the time of greatest honey-flow I have never counted more than sixty a minute in any of my hives). On September 12 I still further strengthened the stock by joining on two casts which had issued from the same parent hive in the spring, and which during the summer had been kept in a separate English hive. The whole now forms a promising colony, and ought to be successful next year.

On May 18 I noticed that the swarm from the Kashmiri hive had a disagreeable smell; so, with dreadful forebodings that there might be foul brood, I opened up the hive. Everything was all right, but the ventilation was obviously insufficient, so I fastened a basket, with a strip of comb-foundation, on to the back. I examined this on October 11, and found that, although the hive was full of honey, no building had been done in the basket. Perhaps this was due to the cold. It was

interesting to see that the bees had used it as a kind of mortuary, and about fifty dead bees were lying in the bottom. The comb in the hive was white and healthy. I concluded that the basket, being cool and airy, and the entrance to the hive not being at the bottom of the front wall but at the middle, it seemed to the bees easier to take their dead to the back than to carry them to the entrance.

Further experience has confirmed the impression I had formed of the gentleness of the Kashmiri bee. This year I have not been once stung, though in joining, examining, and shifting frames no subduer is required. The only use I have had for smoke is to clear the combs in the Kashmiri hives at the point where one wishes to cut them out.

In the second of the Kashmiri hives I was able to cut out five queen-cells after the first swarm issued. The use of a spray of syrup scented with otto of roses appears not to excite the workers, but to soothe them, and I am sure it must be less trying for their nerves than smoke.

Compared with English bees, I am afraid our native variety must be regarded as indolent, and no one in Kashmir has yet succeeded in getting the bees to go up into the sections. If really large colonies can be built up, I hope that next year I may be able to tempt them up with bait.

Wax-moth is most troublesome. It appears to invade all the hives, and only by changing the frames from hive to hive can they be kept clean and free from the pest. I have inquired about foul brood, but have not seen or heard of any yet. Hornets have been worse even than last year. In twos and threes they remain poised on the wing outside the hive, with their backs to it, and as the laden bees come in they snap at them and try to catch them. I find the use of a badminton racket to knock them down is effective.

At the close of this honey year our apiary consists of two prosperous English frame-hives and two Kashmiri hives, one of which contains yellow bees; so we have been more successful than last year. At this rate of advance it is to be hoped that next season we shall have been able to make further progress in demonstrating the value of frame-hives and sound methods of apiculture to the Kashmiris, who are, I must admit, still inclined to be sceptical.—Ernest F. Neve, Kashmir, N. India.

EXPERT EXAMINATIONS.

[7980.] Replying to your correspondent, H. Reader (7960, page 448), I should like to give a concrete example of the need of a test in the expert examinations of handling bees in skeps.

A neighbour of mine, who is a frame-hive bee-keeper, decided this year to add to his stocks by driving condemned bees. He obtained the permission of a neighbouring farmer to "take" two of the latter's stocks, and forthwith proceeded, with the help of the farmer and a friend, to drive the bees. The tables, however, were turned on them, as the bees, after inflicting a number of nasty stings on the party, drove their would-be drivers off, one skep being left inverted and covered with a carbolic cloth, and the other with all means of ingress and egress stopped up, and they were left in this condition until I was requested next day to assist in clearing up the muddle.

An expert should be expert in all the existing methods of bee-keeping, failing which, of course, he belies his qualifications.

The results of such an attempt at driving as I have mentioned would bring discredit on both expert and Association, as many skeppists, although not holders of certificates, are not a little expert in handling their own bees.

I can assure Mr. Reader in this country there are hundreds of cottagers who still believe in the principle of "what was good enough for my father is good enough for me," and until the time arrives when compulsory powers prevent this method of bee-keeping the tests in question should not be eliminated from the examinations.—J. W. Mason, East Yorks.

[7981.] I do not wish to maintain a repetitious discussion upon this subject, but as your correspondent "H. J. M." (7975, page 466) has asked me to answer two questions, I would beg leave of space to do so.

Question 1: What is an expert?

Answer: An expert is one specially skilled by study and practice in any branch of science or art.

Question 2: What is required of an expert apart from the examination?

Answer: When acting for another, even gratuitously, he must exercise his special skill with no less care and diligence than if acting for himself, otherwise he may incur legal liability for damage caused through the negligent use of that skill which is his.

On the facts stated in his letter I think "H. J. M." might safely call his son an "expert"; but until he has passed the necessary examination he cannot be a "certified" expert. The one claims to have skill that he may or may not possess; the other holds the assurance of a recognised authority that he has conformed to a specified standard.

Men who practise the ameliorative arts, whether for man or beast, without holding

some such assurance are apt, regardless of their actual attainments, to be called by unpleasant names.

Having already acted upon "H. J. M.'s" advice, I think that I know my "Guide Book" fairly well. So that, granted the possession of that common-sense with which he does not seem over-ready to credit me, I might be able to satisfy a complacent examiner with regard to my bee-driving ability, even though I had not practised the operation previously.

But can "H. J. M." or any other person rightly claim that this is a satisfactory basis on which to award certificates; and secondly, is inclusion of driving as an obligatory subject good for the advancement of those ideals which all true lovers of bee-keeping—and, I am sure, all members of the B.B.K.A.—have so sincerely at heart?

I am glad to see that the examination regulations are to be brought under consideration at the next Council meeting, and I trust that the two points I have urged throughout this discussion, and which I have just restated in brief above, may then receive official attention.—HAROLD READER, Cheshire.

ROSS-SHIRE NOTES.

[7982.] *Working Surplus Brood Over Section Supers.*—Mr. J. Henry's interesting notes on page 467 make mention of working surplus brood over section-supers. This adaptation of the "Alexander" method is worth a trial where increase is not desired. Personally, I prefer to have the surplus brood in a shallow chamber, as a full-depth body over sections is rather awkward.

In brief, the idea is to winter over a strong stock with a stored shallow super above the standard frames. Such colonies can be relied on to build up strongly without spring feeding. A prolific queen will raise brood in both stories, but should be confined to the lower one when clover blooms. When the flow begins, raise the shallow super and place under it the section-rack, made close-fitting by nailing on side strips. Now it is important that there should be an almost complete division between the brood and honey supers.

An excluder-zinc division means honey piled into the shallow frames as brood hatches out, while the cappings from same are used in sealing over the sections. A sheet of enamel cloth between them prevents all this, and a small hole at one corner allows the young bees as they hatch to find their way below and strengthen the working force.

This scheme, although not quite perfection in actual practice, has its possibilities. The aim is to give a large brood-nest at the right time for brood-rearing, and so ensure a large population of foragers when honey-gathering is the one and only object in view.

Bee-men and Matrimony.—I sometimes wonder what befell my countryman, "Scot," who two years ago sought a wife through an "ad." in the B.B.J. Could he not relate his "experiences" for the benefit of single brother bee-men? We feel suspicious of Mr. Newlywed who, having surrendered his liberty, advises all and sundry bachelors to "go and do likewise." Such advice brings to mind the old story of the fox, who, having lost his tail, wished to bring all his fellows into a like state of deprivation. Veterans frankly tell us that matrimony, like bee-keeping, "isn't honey all the time," and that the apicultural "long tongue" trait is less desirable when exemplified in the personality of one's domestic "queen." And she must be taken for better or worse. When a bee-queen fails to please we simply nip off her head and put another in her place. But the other cannot be got rid of so easily, grandmotherly legislation preventing modern man from emulating the methods of Bluff King Hal.—J. M. ELLIS, Ussie Valley.

"ISLE OF WIGHT DISEASE" AND LEGISLATION.

[7983.] Whilst thanking you for your editorial note and information in your issue of November 10, kindly allow me, in all deference to Dr. Malden and others, to ask, Was the "Isle of Wight disease" (so named from its first appearance) brought over the waters of the Solent to the mainland by foragers or robbing-bees? Or was it brought over in the empty swarm-boxes, skeps, cloths, &c., when they were (as I presume they were) returned empty to the senders when those well-meaning (but, I think, unwise) experts endeavoured to re-stock that disease-infected island with healthy bees? [If the swarm-boxes contained healthy bees, they could hardly bring back disease when returned empty.—ED.] In all courtesy to our learned brethren of the craft, I beg, as an old hand, to hold the latter view.

I would not for a moment infer that an expert would willingly introduce "Isle of Wight" or any other disease into a county or apiary, but that it is often carried and spread (unconsciously) from apiary to apiary, especially by careless "experts" (?) in their clothes, cloths, skeps, swarm-boxes, and even under their finger-nails, and that especially when they are hunting for driven bees (as many do), I do not for one moment doubt.

With an incurable plague devastating and making whole apiaries (worth hundreds of pounds) "like dew before the sun," even we old hands, who love our bees, may well be excused if, rather than have added (to continued bad seasons, foul brood, &c.) the periodical, meddlesome, forced (perhaps pestilent) visits of a legally-appointed inspector, we "chuck the job altogether," as an old bee-keeper expressed it to me the other day; and doubtless very many would then do so.

Finally, a word as to the proposed abolition of the straw skep. A skep costs 1s. 6d., and when "capped" often provides its owner with some good, wholesome honey, and if it becomes infected the loss is comparatively small; but an apiary of bar-frame stocks, worth £2 each or more, infected with "Isle of Wight disease" spells ruin, to poor industrial men especially. Perhaps, in the face of such a plague, the straw skep may yet prove the poor bee-lover's only "one forlorn hope." Who knows?—ICENI-LAND.

KENT C.C. AND TECHNICAL INSTRUCTION.

[7984.] Referring to "Nil Desperandum's" indictment (page 420) in B.B.J. (I wish that he had the courage of his convictions and signed instead of concealing his name), I should like to add my testimony if you will allow me. As to the dahlia and potato competition, I do not know why the corm and the tuber should alone have the honour of selection for competition, to the exclusion of other garden produce (?). The dahlia was originally introduced as an article of food, not as a garden flower. Perhaps that is why my great horticultural mentor and friend, Mr. Leguminosus ("W. Pea"), associates the two for a county competition. I think it is time we had an innovation, particularly as the potato shield is becoming a "pocket borough," and single dahlias, for which there is no class, are becoming all the go! As to poultry and eggs, all praise to Mr. W. F. Snell, the poultry instructor, for the magnificent way he has plodded on for years under difficulty and discouragement. He has almost revolutionised the poultry and egg production of our county. I am sorry to say, however, that Mr. Snell has been dangerously ill for some weeks, and is hardly yet out of danger; but my latest tidings, thank God, are more assuring.

I do not speak without my book when I say that the county would be well advised if it spent much more and not less on Kent poultry-keeping, so important a branch of *la petite culture* and of modern farming generally. The production of eggs and poultry in the county could be doubled if Mr. Snell were given more encouragement in the shape of increased funds. It was a grand spectacle, the poultry and eggs, at Tunbridge Wells Show. I was delighted!

Let me now also say a word, please Mr. Editor, as to your criticism on the subject of poultry-keeping profits. I have sold birds at high prices—a pullet between £20 and £30; but that is the result of breeding for show. I have obtained season after season so high a price for my ordinary stock (that I have had to clear out in winter at a minimum of 10s. a bird for instance) that they are too dear to eat! Poultry-keeping, like every other business, pays or the reverse, according to the methods of the poultry-keeper, and I know that those who devote care and skill get a good return for their labour; but poultry-farms pure and simple never have paid and never will. Poultry-keeping is the poor man's hobby, and will pay well; but it can only pay the farmer as a branch of or adjunct to, and worked in connection with, the larger business of the farm, and a valuable adjunct too. But poultry-breeding is no exception to the general rule: the man who does not understand his business and who is not industrious or painstaking will go to the wall.

Owing to the length of my letter I must reserve my criticism of the K.C.C. bee-keeping programme to another week. —E. D. TILL, Eynsford, Kent.

BIG HONEY-"TAKES."

[7985.] Referring to letter 7949 (B.B.J., October 27, page 428), perhaps an account of my experience will be of interest to your readers. I began bee-keeping with one stock four years ago. The first year I got no surplus, but one good swarm; the second year, with two hives, I took 56 lb. of fairly good honey and had two swarms, one of which I gave away to a friend, and I joined up two of the stocks at the end of the season, and so started last year with two. I only secured 20 lb. of surplus, and finished up the year with one exceedingly strong stock, which I well provided with syrup food, and one stock which only covered four frames and would take very little feeding. As I objected to constant swarming and did not wish to increase my apiary, I tried the effect of turning the hives facing north instead of south in a place which is thoroughly sheltered from the north and east winds, and have had no swarming this year. Last spring I found that the strong stock (No. 1) had still sufficient stores, and as the fruit-blossom was very plentiful the bees looked after themselves, and I put a box of drawn-out shallow frames on. The other stock (No. 2), al-

though I fed them continuously, to give them every opportunity of building up, did so very slowly, and they were not a strong stock until the end of July, when I left for my holidays. By that time they were exceedingly strong, and I gave them two racks of shallow frames from No. 1 stock (after extracting, as mentioned later), hoping the heather season might be good. I may say that the bees have to go about a mile to reach the moors. No. 1 stock worked like Trojans, and as there was an exceptional growth of white clover they rapidly filled the box of shallow frames. I placed another on the top, which they entered at once, and filled that promptly also. I removed the two full ones and put another box of shallow frames, with foundation only, below. The bees continued working bravely until, as I mentioned above, I left for my holidays, before which I took off the two completed supers of shallow frames and extracted the honey, and put in their place two racks of sections, in the hope of getting heather-honey (after extracting the shallow frames I gave them both to No. 2, as mentioned).

I send you herewith a sample, marked 1, from the first or lower box of shallow frames, from which I got 32 lb. of honey. From the second box I got 28 lb. of clover-honey, of which I send you sample marked "No. 2." On my return in September I found that the heather harvest had been a failure, and nothing was stored in No. 2 hive, but the bees were very strong. In No. 1 I found that the box of shallow frames had been drawn out, filled, and entirely sealed, the surplus being some 25 lb. of honey, of which I send you sample, marked "3."

As to the sections, I got five sections filled and sealed with excellent honey, about six filled and half sealed, about twenty containing nectar only, quite unripe. The partly-sealed ones I uncapped, and then gave the whole back to the bees to clean up. Altogether, therefore, I got 90 lb. of honey from one stock.

It may be of interest if I give your readers the result of an experiment I made. I weighed one of the shallow frames before uncapping or extracting, and found it weighed 4 lb. 11 oz.; after extraction it weighed 1 lb. 4 oz. I then gave the frames back to the bees, and after they had cleaned them out I again weighed the marked frame, and found it weighed 6 oz. I should be glad to know if you consider the amount I extracted a fair average—namely, 3 lb. 7 oz.—the honey being very thick. I never saw finer shallow frames; they were of even thickness and dead straight, so that uncapping was easy. As soon as I had completed the extraction and the bees had cleaned up, I proceeded to feed with thick syrup, both hives being full of bees, covering ten frames, and with self-gathered stores filling about half the frames, and, so far as I could judge, about a quarter of the stores was sealed. No. 1 hive took down 30 lb. of syrup, and No. 2 hive, which was not so well stocked, 35 lb.

Three weeks ago I examined both hives before "happing them up," and found in No. 1 the frames nearly all full of stores, about 70 per cent. sealed. I also found a small patch of brood. No. 2 about 60 per cent. sealed and plenty of stores, but no brood; in both cases plenty of bees.—A. D., Dumbarton.

[All the honey samples are of very good flavour and exceedingly dense, which would account for the difficulty in extracting. You would no doubt have obtained more from the combs if they had been placed in a warm room for forty-eight hours previous to extracting. Too great a percentage of honey was certainly left; but still this has not been wasted, as the bees have stored it for winter use. —Ed.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Heather-secretion (page 417).—If there be other practical pointers for heather-men in the valuable papers which "Medicus" has contributed, they would seem to be relative to the date for moor-going and the aspect of the hives. The chart shows a great difference in the dates of the main flow. Thus it is the end of August in 1909 and the classical 12th for the present year. Most heather-men anticipate the latter date with their pilgrimage, but it is always advisable to pay the moor a visit or two to determine the blooming in advance. Some years even August 12 may miss the best days, although generally it may be unnecessarily soon to get there any earlier. And where shelter is unobtainable bees should not go too early, and need not where the bee-man is in intimate touch with conditions. I think that whenever possible he should go himself, for hearsay evidence is unreliable. Unfortunately he cannot always obtain haulage facilities without bespeaking a set day, and may be obliged to go too soon, choosing, no doubt, the less of the two evils. For the flow, when it arrives, is usually of most value during the first ten days or so, although, as the chart shows, it may extend over a month. Often, however, the later days are of little comparative value, and I have noticed the same thing particularly with the clover-flow, where it is most important that bees should be ready beforehand, and not have to wait for their forces, to ap-

pear on the scene the day after the fair, as too often happens. And at the moor hive-aspect would seem to be of some importance. The very early hours indicate that an eastern facing is desirable, so that the morning sun may shine upon the entrance. An ideal location is the south-eastern side of a wall running N.E. and S.W. Shelter from the northerly winds is obtained, and if the hives face east all the southerly hive-entrances are protected by a northern neighbour. The same thing might be accomplished by a shield or wind-board tacked to the north end of each alighting-board, but that means carting extra tackle. By the way, is not the claustral porch an ideal arrangement for moor work? Have any of our heather-brethren given it a trial?

A Murmur from Kent (page 420).—A point brought out by this letter is, in my opinion, a sound one. Experts, so called, should be able to show cause for the faith that is in them, and success with their own product on the show-bench is at least some evidence of their ability. This is no indictment of those who are entitled to style themselves expert, but I believe it to be true that there are good experts and indifferent experts. The B.B.K.A. examination is quite an adequate test, but in the hands of different examiners it may be unequally applied. I must confess myself to be by no means a slack examiner, and I err, if anything, on the side of strictness. But I honestly believe, and assert with pride, that with very few exceptions the male candidates whom I have passed may confidently be recommended for their work. That is, I think, as it should be, if the credit of the B.B.K.A. and the satisfaction of local associations are considered to be the questions of prime importance.

Ant-proof Legs (advt., page iii).—I see that one of the latest dealers stocks these articles, and I am wondering whether many bee-keepers are troubled with ants. We do not suffer from them in the North. Now, if they were to say earwigs I could understand it. I constantly find whole families living under most improper conditions in my hives, and I am usually followed around by an intelligent pullet or two when making inspections. Our bees do not seem able to tackle them, but I imagine that the stingless variety would make short work of them. Ants do, however, give trouble occasionally. One summer day I sat upon a convenient hillock to observe a hive-entrance, and was presently aware of a sting, or bite, on my leg. Investigation showed that I was regarded as fair play by a host of ants. Now, had I only known of these patent legs I should have been safe. But I see that they are only sold in sets of four. Will any "brother bee-keeper" join with me in a purchase?

Examination in Bee-driving (page 429).—May I join issue with "H. R." as to the desirability of this process being included in the practical examination? It is important that a certified expert should be able to do more than merely handle frame-hives, and the skep affords a convenient method of further testing his powers. Skeps are by no means extinct in the country, and experts may be called upon to instruct cottagers in transferring. But bee-driving is only the A B C of dealing with bees in fixed-comb receptacles, such as skeps or boxes, or the awkward natural lodgings bees sometimes adopt. And it is not so difficult for a candidate to instruct himself. Skeps may be purchased very cheaply, practised upon, wintered splendidly in the upper part of a frame-hive, transferring themselves later, and the purchaser be well repaid for his outlay.

"*I.O.W. Disease*" (page 439).—"W. H." seems surprised that his bees should die in spite of his attempted cure. But was not the remedy worse than the disease, and did he not actually contribute to the sudden death of the bees? For he shook off the whole of the bees and returned the combs to a hive, with the inevitable result that only old bees, probably infected, returned, the young bees which had not previously left the hive, and which were necessary to the continuance of the stock, perishing. In this disease it appears probable that flight is hindered by the presence of the swollen intestine preventing inflation of the lungs, and this choking-up of the intestine is no doubt gradual; so that bees may have returned to the hive in which the process was incomplete. If the honey contains infection it would seem as if cure were beyond accomplishment. But if, as is asserted, it does not, the immediate destruction of the flying bees and the preservation of the brood elsewhere may be the most economical solution.

Queries and Replies.

[4059.] *Cleaning Extracted Combs in Winter.*—I should be very glad of an answer to the following three questions in B.B.J.: 1. I find on an average about eight or ten dead bees each week on the alighting-board of my hive (I have only one). Is this quite natural? If not, what can I do to prevent it? I used 25 lb. of sugar for feeding, and there was a fair quantity of stores in the hive when I began to feed, so that there should be plenty of food. The bees are on ten

frames, and are packed up as described in the "Guide Book," only I used torn paper instead of chaff on the top and paper shavings round the sides. 2. Will a piece of wood resting on the alighting-board and leaning against the porch be all right for shading the entrance when snow is on the ground? 3. I have been making an extractor, but have only just finished it. Will the honey remaining in the combs after extracting do any harm, or is there any means of cleaning combs at this time of the year? Would washing in warm water and carefully drying be any use?—W. B. BENNETT, Ashton.

REPLY.—1. This is only natural on fine days. The bees clear out the dead, and, of course, right through the winter a few old bees die off. 2. Yes. 3. You cannot wash the combs. The best plan will be to put the shallow-frame box with combs over the calico quilt, with feed-hole flap turned back, taking care to wrap the top of shallow frames warmly with quilts. On warm days the bees may clean the combs.

[4060.] *Wintering Bees in Observatory-hive.*—As a regular reader of your valuable weekly the B.B.J., I should be pleased if through the medium of same you could answer the following queries: 1. I have an observatory-hive which takes two standard frames and three sections. Could I successfully winter two frames of bees in same? 2. Could so few frames of bees, if deprived of their queen during the summer, breed another one? 3. I have four stocks, two possessing superior queens. What would be the best plan and time for re-queening the other two stocks with queens from superior ones? 4. I have purchased recently some hives with which were some empty combs. Most of these are badly affected with wax-moth, but on some the moths have only just commenced their work of ruin. Can you suggest any method of saving combs? Shall I render the others down into wax? —TYKE, Yorks.

REPLY.—1. If kept inside a building this can be done, but it is a great deal of trouble. 2. Yes, so long as there are plenty of bees to well cover the combs. 3. See answer to "Wye Valley." 4. Melt all down for wax; do not try to save the combs. Also it will be well to disinfect the hive by scorching with a painter's blow-lamp, to be sure that there are no wax-moth cocoons remaining there.

[4061.] *Re-queening during Honey-flow.*—I have four stocks of bees which I wish to re-queen next season, at the same time getting the maximum quantity of honey. I may say the season here is a long one, commencing with bush and other fruit blossoms, and ending with clover; there are no limes or heather. 1. Would it do to de-queen, say, when the clover begins to bloom, so that more bees may be set at liberty to forage? 2. Is it a fact that bees do not work so well when they have not a laying queen among them?—WYE VALLEY.

REPLY.—1. The better plan would be to have four nuclei and rear the queens in these, one close to each hive to be re-queened. When the young queen is fertilised and begins to lay, de-queen the old stock, allowing it to remain queenless for twenty-four hours; then unite the nucleus in the ordinary way, caging the queen. 2. This is quite true; bees work better when they have a laying queen.

[4062.] *Beginner's Queries.*—1. I enclose a piece of comb taken from a hive the bees in which recently died. I only bought them a few weeks ago, and think it must have been a weak stock, as very few bees were found in the hive. Will you please say if the comb is heather, and would it be safe to put a swarm into the same hive next spring? 2. The frames of this hive run contrary to the way they do in the "W.B.C." hive. Are they any the worse for this? 3. I find some bee-keepers feed their bees on raw Demerara sugar. Is it all right to give them this in a turned wood feeder?—AMATEUR, Co. Durham.

REPLY.—1. The comb is rather old and clogged with pollen; we cannot detect any disease, and there is no trace of heather about it. We should not advise using the combs for a swarm next spring. Melt all the old combs, and start with foundation to get the best results. 2. It is immaterial which way they run. 3. Demerara sugar should not be used for bee-food except in spring, and even then it is not advisable to use it. Pure white cane sugar is best.

Notices to Correspondents.

H. B. G. (Berks).—*Combs from Infected Hive.*—The combs will be all right if you disinfect them now and let them stand until next season. Why not use formaldehyde fumes for the disinfection?

J. B. (Wetley).—*Sending Bees by Goods Train.*—We have frequently sent bees by goods train in the winter. If you agree to accept all risks there should be no difficulty.

Honey Samples.

A. W. RIGLER (Poole).—The sample is a fairly good heather-blend honey. It has been gathered partly from ling and partly from the bell-heather.

J. P. (Cheshire).—Very good sample of clover-honey, nicely granulated. You cannot reliquefy honey in sections.

Editorial, Notices, &c.

REVIEWS.

Handbuch der Bienenkunde. Part 2, *Krankheiten und Schädlinge der erwachsenen Bienen.* By Professor Dr. Enoch Zander (Stuttgart: Published by Eugen Ulmer. Price, m. 1.30—1s. 4d.).—This is the second part of a handbook on bee-keeping which Dr. Zander is bringing out. It is devoted to diseases affecting adult bees, and the subject is treated in the same masterly manner as was that on foul brood. The diseases are classified under different headings, the first chapter being devoted to *Nosema apis*, the form of virulent dysentery specially studied by Dr. Zander. This disease is treated exhaustively, and its development illustrated with numerous figures in the text, in addition to a fine coloured plate showing the chyle-stomach in health and disease. In the second chapter the undetermined diseases are described, such as mucorine, "Isle of Wight disease," the Brazilian bee-plague, and paralysis. All these diseases show similar symptoms, and are easily mistaken the one for the other. For none of these diseases is there known any remedy at present.

The second division is devoted to describing the symptoms of the various diseases, so that they may be more readily recognised by bee-keepers. This also contains an instructive chapter on hermaphrodite bees, which are not so uncommon as one would suppose. The last division treats of the different enemies of bees amongst the animal tribe. This pamphlet of forty pages, besides the thirteen figures in the text, contains thirty-eight figures on eight full-page plates. It is a valuable addition to our literature on bee-diseases, containing as it does all the latest information, and should be useful to those wishing to become thoroughly acquainted with the subject of which it treats.

Untersuchungen über die Epidemiologie der sogenannten Faulbrut der Bienen. By Dr. A. Maassen (published by Paul Parey, Berlin. Price, m. 1.50—1s. 6d.).—This appears in the fifth yearly report of the Imperial Biological Institute, Dahlem. In it Dr. Maassen gives the results of his further investigations with foul brood in bees. The experiments were carried out with the object of finding out whether the disease can be propagated by means of infected wax and to what extent comb-foundation was able to carry the infection. Colonies were placed on comb-foundation made from wax obtained from colonies that had succumbed to virulent foul brood. Not in a single case did the disease reappear, and all the colonies remained healthy. It is therefore most satisfactory to know that, according to these experiments, foul brood cannot be introduced with comb-foundation, even if it is made from wax obtained from badly-diseased colonies. He further details the experiments made in determining at what period the various bacteria producing the different forms of foul brood are found. In conclusion, he recommends that bees should be put on comb-foundation and encouraged to build new combs, and the disinfection recommended in his previous papers carried out (see B.B.J., December 9, 1909, page 481).

In the same paper there is a report on Dr. Maassen's investigations of dysentery (*Ueber die Ruhr der Bienen*), and he corroborates the findings of Dr. Zander with respect to *Nosema apis* being the cause of the virulent form. He found the parasite widely distributed and that many colonies had entirely succumbed to the disease, some even which did not show the usual characteristics of the malady. He points out that the parasite may be present in healthy bees in small numbers without multiplying, and only become dangerous when the health of the bees becomes impaired. We have also to thank Dr. Maassen for sending us two photographs of the spores of *Nosema apis* enlarged to 500 and 1,000 diameters.

We have also received a leaflet by Dr. Maassen published by the same institution, giving full instructions with respect to foul brood, its character, and how it can be recognised by the bee-keeper. We shall probably refer to these works again.

ROOKS AND BEES.

In the inquiry respecting the feeding habits of rooks carried out by Mr. W. E. Collings, M.Sc., for the Council of the Land Agents, he mentions that in 116 cases he found beetles or their larvæ in the gizzards. In seven cases he found bees and wasps. The bulk of the food taken by rooks was found to consist of grain.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 446.)

No. 1.—White Clover (*Trifolium repens*).

I intend to give both common and botanical names of all plants which I describe, because in the latter we have some description of the plant, whereas the common name is often without meaning. In the flower we are now discussing, *Trifolium* refers to the three-fold leaf, while *repens* indicates that it is a plant of creeping habit. This is sometimes known as "Dutch" clover, because a good

deal of the seed is imported from Holland.

The trifoliums, or clovers, are a numerous family, but why they should be called "clovers" is not quite clear. It may be because they resemble the club of Hercules, as on playing-cards, or because of the "cloven" leaf.

It is without doubt the bee-keeper's flower *par excellence*, growing as it does in such profusion and under favourable conditions yielding nectar so copiously for his bees to convert into honey, and, in company with one or two other flowers, it takes first rank in the standard of honey value.

Its roots are fibrous, creeping and spreading, with little swellings, called nodules, forming here and there, which contain colonies of nitrogen-forming bacteria. The stems are also creeping, rooting at the nodes. The leaves are formed of three obovate leaflets, distinctly toothed and slightly hairy. The flower-stems grow erect, and vary from $\frac{3}{4}$ in. to 12 in., according to the surrounding conditions. The white clover always pushes its flowers above the leaves, so that it may readily catch the eye of the bee, and if the surrounding herbage is tall it must necessarily send out a taller stem for this purpose. If, however, it grows by a footpath where the grass is kept very short, hardly any stalk will be found; so that it will be seen that it can accommodate itself to circumstances in this respect. On close examination, the stalks will be found to be furrowed. The inflorescence (flower) is a globular umbel of white flowers, which expands from the bottom upwards, and as each flower is fertilised it falls down close to the stalk, to give room for its sister above to likewise expand and follow suit; this continues until the last flower on the top of the umbel is alone and until it receives its visit from the bee.

The stamens are what are called diadelphous (in two bundles), the style is simple, and the ovary is a single cell or pod like that of the pea, to which order (*Leguminosæ*) it belongs, and contains from two to four seeds.

It flowers liberally from May to October. In sheep-farming districts, such, for instance, as Leicestershire and Lincolnshire, it is grown alone; in these counties many acres may be seen in bloom together, and the bee-keeper who has his colonies near such fields is as fortunate as the farmer who has bees to visit his crop.

White clover is not particular as to situation, and is found—as most people are aware—on the sides of turnpike-roads and lanes, in the sun or shade, as also on all kinds of waste land; and, as a matter of fact, the difficulty is to find where it does not flourish.

The white clover was one of the first papilionaceous flowers in which the necessity of insect visits for full productiveness was illustrated. It is chiefly fertilised by the bees, so that it is pre-eminently the flower for the bee and the bee for this flower.

Although some botanists say clover is self-fertilising, without being dogmatic I would point out that Professor Francis Darwin found that where insects were excluded by means of a fine net the plant was only one-tenth as productive as when freely admitted, and one of my own experiments also inclines me to think this is true.

In 1908, after transplanting for experiment some white clover into my garden, I came across a sturdy self-sown plant; so I took this rather than the transplanted root as being the better of the two. When it began to blossom I selected three of the most vigorous heads just before the first flower was about to open, and, after removing all small insects, I supported each on small stakes, and put a framework of specially-constructed wirework over each head to give it plenty of room to develop. Over this I spread some fine-woven gauze, to exclude insects from above and to admit light and air. Cotton-wool was tied round the stalk to prevent insects from ascending to the flower; and so they grew, each flower having about 3 cubic inches of space. The plant had in all twenty-nine flower-heads, which will show that it was very vigorous.

The three protected heads flowered well to the very last floret, and were the first to ripen; but there was a marked difference at this stage in their peduncles compared with those of the other flowers.

When the majority of the flower-heads were ripe, I cut off the three which had been protected, and also three of those unprotected, and after cutting their stalks to equal lengths they were weighed, with the following result: The three unprotected heads weighed 18 grains, while the three protected ones weighed only 4 grains.

Here was, I considered, strong evidence in favour of clover requiring aid to fertilisation. However, I went further, and allowed them to dry for a fortnight, after which they weighed as follows: Three unprotected heads, 11 grains; three protected heads, $2\frac{1}{2}$ grains.

I next separated the seeds, and found in those unprotected: No. 1 head, 112 seeds; No. 2 head, 99 seeds; No. 3 head, 93 seeds. Total, 304. Average per head, 101. Weight of seeds, $8\frac{1}{2}$ grains. On examining the protected heads, after a long and diligent search I was unable to find a single seed.

After reading this there may be some who will still maintain white clover *is*

self-fertilising, and, assuming this to be so, still I think all will agree that cross-fertilisation gives more vigour and productiveness, and that in this way the bee plays a very important part towards the success of the crop.

The pollen is not yielded by this flower in any quantity, as may be seen by the small loads brought home by the bee. When taken from the flower the colour is a pale yellow, and I expected to find that on the leg of the bee of much the same colour, but was surprised to observe, when watching the bees working on white clover, that when packed into a pellet with an admixture of saliva it turned a dark dull green. The form of the grains is ovoid, with flattened ends and three long depressions or flutings extending from one end to the other (see Fig. 3. A), and set equidistant round it, so that a cross-section appears tri-circular almost like its leaf (Fig. 3. A a).

The measurement is $\frac{4}{1000} \times \frac{3}{1000}$, or $1\frac{3}{4} \times \frac{3}{4}$ 1000th parts of an inch. This, of course, is the average measurement, as individual grains vary a little in size.

Many pollen-grains when in contact with moisture change their form entirely, and different media will sometimes alter them still more. In contact with water the grains under consideration assume a spherical form, from which grow at equidistant points three *processes* or projections, which are usually the commencement of the pollen tube (Fig. 3, B). If this same pollen-grain be now placed in a 5 per cent. solution of formalin, it will in a short time assume the form of a wrinkled pea, the processes of which are nearly hidden (Fig. 3. C).

The drawings B show the changes it undergoes when placed direct into honey, as would practically be the case when taken up with the nectar by the bee. B b shows a further development, and B C a still further stage; but even this does not appear to be final, for although it is the form generally found, it will sometimes be more advanced—that is, the wrinkling will become more acute until it almost hides the processes, and appears as shown at C when in formalin.

I may here explain that the lines in the drawings indicate it is the same pollen-grain seen in different positions, or an enlargement of it, or the development in the same media.

D shows a grain one of the processes of which has burst, the fovilla escaping; E an empty pellicle; and F a grain with a pollen-tube growing. These conditions are mostly found in every drop of medium examined.

(To be continued.)

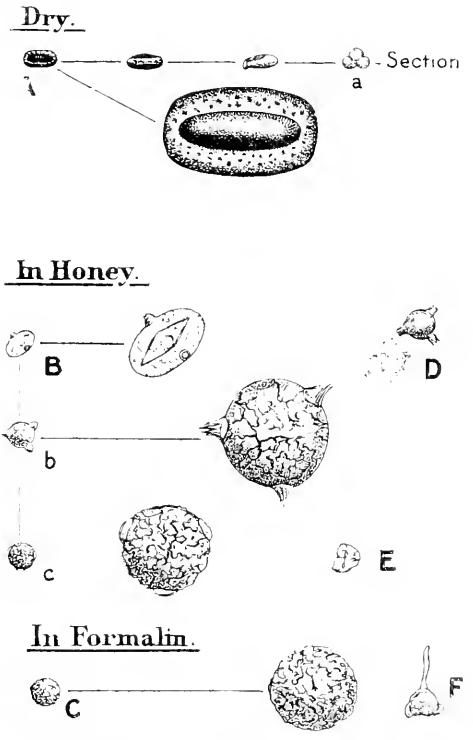


FIG. 3—POLLEN-GRAINS.

The magnifications in the first instance are about 100 diameters.

AMONG THE BEES.

ENTOMOLOGY.

I observed lately that the B.B.K.A. were consorting with the Entomological Society, and so, I suppose, my thoughts were that way bent. The science is a very old one—indeed, I think, the very oldest, because "Adam gave names to all cattle, and to the fowl of the air, and to every beast of the field." We are not expressly told that he gave names to all "insects"; but why not? The task would be a hard one if we credit the fact that while all classes of animals number only about 30,000, insects probably amount to 400,000. Yet each of these, minute although it be, is, as Pliny stated, made with "unfathomable perfection." Solomon, too, as well as being a botanist, was an entomologist, as he wrote about "beasts, birds, and creeping things." Bee-keepers should be entomologists, because many of these tiny insects are closely allied with our own bee, the whole order of Hymenoptera being close kin. Marvellous as are many traits and habits of the hive-bee, several other insects run it hard for diligence, industry, judgment, foresight, and economy.

The field is a wide one, so I can only give a few brief hieroglyphic or kaleidoscopic glances here and there. Many of these tiny insects are provided with tools wonderfully fitted for the various operations necessitated by the nature of the work they have to engage in to provide themselves with food and shelter. "They have their saws, files, augers, gimlets, knives, lancets, scissors, forceps," and many similar instruments. Some of these insects are architects, some builders, some dyers, some spinners. One of them—*Megachile muraria*—made bricks without straw before the Israelites; while the white ant can construct bridges, aqueducts, arches, and buildings of immense size compared with the bulk of these small insects. What more beautiful and wonderful specimens of weaving can man with all his art accomplish than we see wrought by a great variety of spiders? The first paper-maker was the common wasp, and one of the finest pieces of architecture for plan, execution, and highness of finish is the hexagonal cell so well known to bee-keepers. Then have we not bees and wasps who are masons, carpenters, clothiers, and upholsterers?

Numerous insects prove a great benefit to mankind. Many act as scavengers; some even act as gravediggers, burying offensive carcases. Wasps are excellent carrion carriers and destroyers. Were it not for hosts of aphidivorous flies the aphides would become a veritable plague. Dragon-flies are voracious devourers of smaller insects, and so help to curb in their numbers. Spiders artfully set snares for countless hosts of other insects. Birds in the air, the fish in our seas and rivers, and walking and crawling creatures on the land make them their prey. The infinite variety of weapons of offence or defence is a never-ending source of wonder and admiration for the student of this fascinating study.

Many strange facts may be gleaned from an investigation of the life-history of many insects. One sexual intercourse is sufficient to fertilise the eggs of numerous generations of aphides. Nay, they propagate not only by direct increase but also by budding, and many insects are hermaphrodite. The same insect at different periods of its existence may be an inhabitant of the water, walk on land, and fly in the air, and during its metamorphosis from the egg to the perfect insect its shape and size may be so diverse at different stages that it is difficult to credit that it is the same creature. Take a common butterfly. The first stage is the egg. When it breaks into the larval stage it shows as an ugly worm or caterpillar. Later, after feeding voraciously and increasing vastly in size, the larva assumes the chrysalis stage. Some insects spend only a few hours in this state, others one or more years, after which comes the imago stage, when a perfect butterly, or other insect, issues gorgeously apparelled.

The manner in which insects obtain food is of absorbing interest, and the source is inexhaustible. Thus every part of a tree, shrub, or flower supplies food to one class or another. Some insects live on the roots, others on the trunk, a third feed on the leaves, others get their living from the flowers, while yet others select the seeds or fruit. Not only hive-bees, but humble-bees, wasps, butterflies, and countless hosts of flies, suck nectar from the flowers; and all of these are furnished with organs exquisitely fitted for sucking the sweet juices from the depths of the nectaries when the sweet is hidden away. Then, to add to the interest taken by us in insect existence, we find many of them useful to man. The silkworm gives us silk. The bee supplies us with wax and honey. From others we obtain valuable dyes.

In sagacity many of these tiny creatures far out-rival the larger animals, and many more even approach man himself in wisdom, sagacity, and the marvellous degree of finish they impart to their work. The ants in the wonderful government of their homes, the bees in the construction of their cells, and the spiders in the perfection of their inimitable web-formation, are cases in point; but many others are almost as worthy of admiration for the perfection of their works of art, their means of defence, their provision for maintaining their young, their prescient forethought, and their marvellous adaptation of means to an end. Right through the season, indeed, there is a countless succession of these absorbing wonders, and many bee-keepers, spending a large proportion of their time in the outer air, with Nature and all her works surrounding them, have excellent opportunities for carrying on the study. Our schools, even in the junior classes, and more and more as pupils advance, now devote a considerable amount of time to "Nature-study." The field is wide and fascinating, but, rightly carried on, the child mind is ready to absorb all the salient points in the intricate maze of entomological study.—D. M. Macdonald, Banff.

THE B.B.K.A. LIBRARY.

We have pleasure in stating that the following books have been received for the library during the present year: "Wax Craft," presented by Mr. T. W. Cowan; "A Modern Bee-Farm," presented by Mr. S. Simmins; "The Times Bee-Master," presented by the Rev. C. H. Murray;

"Bee-keeping that Pays." "A Modern Bee-Farm," and "British Bee-keepers' Guide Book," presented by Mr. J. Lockwood.

Mr. Ernest R. Root has generously sent the following American books and pamphlets: "Chemical Analysis and Composition of American Honey," "Methods of Honey-Testing for Bee-keepers," "Brood Diseases of Bees," "The Cause of American Foul Brood," "Production and Care of Extracted Honey," "The Bacteria of the Apiary," "Rearing of Queen-Bees," "The Laws in Force against Injurious Insects and Foul Brood in U.S.A.," and "Bee-keeping," by F. Benton. The A. I. Root Co. have sent a copy of the latest (1910) edition of "The A B C and X Y Z of Bee-Culture," "A Year's Work in an Out-Apiary," and Alexander's "Writings on Practical Bee-Culture"; Messrs. Dadant and Sons a copy of their latest edition of Langstroth's "The Hive and the Honey-Bee" (edited by Charles Dadant); Mr. Geo. W. York (editor, *American Bee Journal*) "Scientific Queen-Rearing," by Doolittle. "The Townsend Bee-Book" was presented by Mr. A. Boyden (Medina, Ohio, U.S.A.); "Forty Years Among the Bees" by Dr. Miller; Mrs. Anna B. Comstock sent "How to Keep Bees"; and Dr. Phillips (U.S.A.) various pamphlets.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[7986.] The continued wet weather will tell its tale on the cracked roofs of our bee-hives, and in any case where rain has penetrated, the wet wraps should be removed at once and dry ones put in their place. If the cake of candy is used up, another should be given, and after making all warm and snug the roof must be mended to prevent a recurrence of the mischief. A good, durable preventive of wet is to cover the roof with a sheet of thin zinc, cut large enough to turn down and nail under the eaves of the hive.

I hear mice are numerous and troublesome this winter. Evidently so much rain makes their nests in the ground damp and uncomfortable, and they are glad to take shelter in or around the hives, where they find suitable material for nest-making and an abundance of food near at hand. The "Veto" trap (no politics) is a sure killer, and can be placed set on the alighting-boards, to catch the would-be intruders as they try to pass in at the entrances. A pretty sure sign of the depredations of mice is the quantity of crumbled comb at the entrances of hives in which they have been working.

The close time of the year for bees is a period when we should read up notes of the past season, and again go through our failures—aye, and successes too—that the fireside musings and plannings may be put into practice another spring and carried to a practical issue. Plans should be noted down when thought out, and not left to memory only. To the new members of our craft I would suggest that they read up some good book on bees during the long evenings, and thus benefit by the experiences of others, saving themselves years of experimental work; and if they are bent on increasing their stock of hives another year, and require new ones, as an old hand I would counsel them to make their new hives of good sound material, ample in size, and with room to take two boxes of shallow combs or two or three racks of sections, to have the brood-chamber of the standard size, and to buy their frames ready made, which, I believe, they will find cheaper and better than making them themselves.

Section-foundation.—With reference to this matter, "D. M. M." (page 394) may be right under certain conditions in saying that a wandering queen would leave the sections and return to the brood-combs, the first condition being when she found the foundation not worked out enough for oviposiling, and the second when the section contained combs with cells too deep and not reduced in depth by the workers ready to receive the eggs; but not when the brood-combs are full of brood, eggs, and honey, and the worker-bees have prepared the combs in the sections ready for the queen to deposit eggs in them. Our modern method of restricting drone-breeding induces the bees to produce drones wherever there is a chance of a few drone-cells in the sections. At least, that has been my experience, though I do not get 1 per cent. of broody sections.—W. Woodley, Beedon, Newbury.

EXPERT EXAMINATIONS.

[7987.] At the risk of trespassing too far upon your space and courtesy, I venture to offer the following remarks upon Mr. Crawshaw's really valuable contribution to this discussion. From his "Cappings" (page 481) I extract these sen-

tences: "The skep affords a convenient method of further testing (the examinee's) powers." "Skeps may be purchased very cheaply, practised upon, . . . and the purchaser be well repaid for his outlay." "But bee-driving is only the A B C of dealing with bees in fixed-comb receptacles." One therefore naturally infers that "driving" is retained, not on its merits, but as a matter of expediency as viewed from the standpoint of the examiner. The examinee living in a "non-skep" district must purchase and import a skep, with all the attendant risks of contagion and annihilation not only to his own apiary, but to those of the whole locality. And that this is no imaginary risk every reader of the B.B.J. is already well aware. He reintroduces a method of bee-keeping of which his district was desirably rid, thereby setting an example which is dangerous in proportion to his apiarian reputation and enthusiasm. Even if, after all this expense and risk, he obtains the coveted certificate, he has mastered no more than the A B C of fixed-comb manipulation, and must trust to future practice and experience if he intends to attempt the transfer of "awkward" stocks.

Such a fiasco as is mentioned by J. W. Mason (page 477) might easily, in my opinion, fall to the lot of even a "certified" expert who undertook to transfer an "awkward" stock upon the strength of simple skep-driving done for his examination, possibly some years previously.

Would it not be safer and wiser to "drive" skeps out of the examination syllabus altogether? Surely artificial swarming, uniting, and general bar-frame manipulation afford sufficient scope to test the abilities of any candidate.—HAROLD READER, Cheshire.

[7988.] Respecting Mr. Reader's remarks (page 465) in reply to my letter (page 448), it appears to me his outlook on the subject is rather limited. He interprets my letter by using incomplete passages without qualification in order to make the statements appear illogical.

I do not suggest that it is necessary for a man to have "certified ability" to carry out driving operations, but I do regard it as being essential that he should have *practical* ability successfully to carry out these manipulations and deal with the bees to the best advantage under various conditions, whether he be certificated or not.

I feel sure that if Mr. Reader had heard the sentiments (perhaps more expressive than elegant) of some of the skeppists I have come in contact with, who have suffered at the hands of a one-sided bee-keeper when attempting reformation, he would soon realise that a little knowledge is dangerous, and in practice only serves to prejudice all attempts at reform.

If the certificate is of sufficient value to be worth having, would it not be more logical for a candidate to prepare himself to meet the conditions laid down by practical and experienced bee-men rather than attempt to alter the regulations to suit the abilities of candidates, at the same time making the certificates comparatively valueless?

Doubtless in some districts there is a scarcity of skep hives, but a practical bee-man would soon be able to overcome such minor difficulties.—G. W. JUDGE, Dartford.

[This correspondence is now closed.—ED.]

FOUL BROOD LEGISLATION.

[7989.] Believing as I do that opposition to legislation has some justification, will you allow me to state a few of the reasons as they appear to me to affect the subject?

The presence of foul brood in an apiary does not always seem to cause extension of the disease. There appear to exist slight attacks which cure themselves, or are apparently cured by methods which could not stop any virulently contagious condition. There are at other times severe attacks which cause much damage. When these latter appear it is possible that they are the result of previous predisposing conditions existing in the hives which favour the development of germs always present, but which cannot develop without the favourable conditions. For the serious form the only certain cure at present known—i.e., to include every case which may occur—is to burn the hives, because we do not know sufficient about the life-conditions of the germs or of their enemies. This statement is supported by the uncertainty of the remedies suggested and used, in the form of drugs and otherwise.

Another remedy is now proposed—legislation—by which appointed persons will be empowered to exercise their own judgment in place of the owner of the hives, and to compel every bee-keeper to carry out such instructions as the opinion of the appointed inspector may lead to. This would, of course, be most excellent if the inspector were always practical and sensible, and, further, possessed complete knowledge of the subject. In the official world this does not happen, as everyone with official experience knows, and I submit that it will not be attained in the bee-keeping world, even with great ex-

pense. I may refer to the many and varied opinions held on the salvation of garden crops, orchards, &c., by entire destruction of birds. Some believe that the destruction of the house-fly, the rat, or some other object will effect the disappearance of certain epidemics, and it will hardly be denied that our "bee-experts" also have their pet theories, the truth of which being a conviction with them, how can it be expected that they will renounce these when they find they have the power of putting them into force? All such opinions are not yet decided.

The promoters of legislation appear to me to believe that if only it is brought in it will result in an entire disappearance of danger of disease. But is it not true that the carrying out of the proposal may also give rise to disease? The numerous antiseptics which are continually proposed and used, without knowledge of their physiological effects on the bees, or even whether they affect in any way the injurious germs, are a danger. Again, the inspector, or "expert," may carry infection with him. The supervision of the expert will necessarily be very limited. I suggest it would be, in the present state of our knowledge, much safer to rely on Nature and the action of the germicidal germs, which tend to destroy their own injurious species, but which are themselves destroyed by active antiseptic materials, than on the tentative and experimental methods of appointed inspectors, who may not have the necessary qualification for appreciating the results of such specialised and difficult work. Promoters of legislation quote the results obtained by its introduction into other countries, but as we cannot go into and test these cases ourselves it seems to me rather unfair to bring them in. We do not know that the local conditions there are sufficiently similar to our own to convince us that identical methods would succeed here. And it is possible that the tendency to generalise on insufficient data may have influenced some of the reports.

How is it that bees and bee-keeping have managed to exist in this country during the long period that skeps have been in use? Those skeps had not the great amount of manipulation and interference in which the present-day bee-keepers indulge, and they possibly unwittingly contribute to unfavourable conditions for the bees.

Lastly, is it wise to employ legislative force in cases where so much uncertainty, as I hope I have shown above, exists? Will not most bee-keepers wish to do the best thing for their own sakes? And is it not but a minority—and, I believe, a small minority, though, of course, it cannot be proved—who will jeopardise their own and their neighbours' hives out of sheer wilfulness? Will not the education such as the B.B.K.A. supplies be a much better resort than legislation for all of us? Legislation on certainties and when all wish for it would be a different thing from the proposals as now advanced.—C. B. Hunter, Sharcot.

[We have yet to learn of a single instance where legislation has been adopted that it has not been successful in reducing or almost entirely eradicating the disease, and we do not believe that we have to fear any danger from it in this country. Bees have managed to exist in this country during the long period that skeps have been in use for the simple reason that two out of every three colonies were destroyed every year. As a rule, the first swarm was kept, and the parent stock as well as the after-swarms taken up and destroyed. In this way the bees always had to make new combs, and the old ones with any germs they may have contained were destroyed. As in other countries, so it has been found in this that there are many keeping bees who will not do anything when they have disease in their hives, either through ignorance or wilfulness. It is such people that are a danger, and the only way to prevent them from being a nuisance is to have the power to compel them to submit to inspection and the treatment of their colonies. We certainly believe that the destruction of flies and rats would cause certain diseases to cease to exist, just as the destruction of mosquitoes has caused that Panama scourge "yellow fever" to disappear. We know what has been done with regard to cholera and other diseases, and there is no reason why equally beneficial results should not follow from legislation with respect to bee-diseases.—Ed.]

LEGISLATION AND INFECTED HONEY.

[7990.] A number of your correspondents seem to be much perturbed that honey should be included among the articles liable to be destroyed in an infected apiary in the proposed Bee-Diseases Bill. Some years ago I went over to a friend's apiary twelve miles distant to fetch some bees that were in frame-hives. My friend was giving up bee-keeping, and I was to have the bees. The first hive I looked into was reeking with foul brood, and as the other hives were in the same condition, instead of taking the bees home I suffocated the lot. Had I been given a free hand I would have burnt hives, &c., as well. The combs contained a fair amount of honey, which the owner insisted on being extracted before they were

burnt, as he knew that honey from foul-broody stocks was harmless to human beings if they cared to eat it. I extracted about 60 lb. from the combs, but the stench was so bad that I had to turn my head away from the extractor when turning the handle, and the honey itself had a distinctly foul-broody smell. Would any of your readers advise that honey such as this should not be destroyed when endeavouring to clear an apiary of foul brood? It is well known that honey from a hive infected with foul brood will, if given to a healthy stock, cause that stock also to become diseased, and it is quite possible—I was going to say probable—that in extracting from diseased combs a little of the infected honey may be spilt or smeared in some place where bees may have access to it.

We often hear the saying that it is possible to drive a coach-and-four through any Act of Parliament, and I venture to think that omitting honey from the list of articles that may be ordered to be burnt would be leaving an already open coach-road, and would in many instances seriously handicap an inspector who was dealing with an infected apiary. It would not matter how little honey or how much disease there was in the combs, the owner would be able to claim the right to have the honey extracted, and the inspector would be powerless. Of course, an inspector would have to use his discretion with respect to honey in supers, but he should make it certain that infected honey was not to be used for bee-food, either in syrup or honey-candy. If the honey was of poor quality and not very saleable, the best course would be to burn it.—J. HERROD, Sutton-on-Trent.

HOW BEES CLEAN THEIR ANTENNÆ.

[7991.] Mr. J. Herrod's contribution (7973) on the above subject reminds me that Colonel Walker took the same view some ten years ago, but my observations led me to the conclusions recorded on page 454. I spent a considerable time last summer watching the operation, and noting how bees "wash" themselves. The study was not carried on with scientific exactness, but only to while away some idle moments. Next summer I hope to take my observations more carefully.

Meanwhile, in support of my paragraph on curry-comb, let me quote from Cowan's "Honey Bee" (page 35): "The operation may frequently be observed, and it will be noticed that the antenna on the right side is cleaned by the apparatus on the left leg and the left antenna by that on the right."—D. M. M., Banff.

[Careful observations lead us to believe that both are right, and that sometimes the bee uses the right and the left legs to clean either of the antennæ.—ED.]

BEES AND FLOWERS.

[7992.] I was much interested in Miss Annie D. Betts's letter on the various pollens brought home by her bees. I suppose she and others of your readers are certain about lime pollen, which the lady says is "golden-brown." When the lime-trees were in bloom at the end of June this year I saw every bee coming home with pollen like little bits of cream cheese. What pollen was that?

I enclose a sample of honey taken from the hives in August. The comb was fully sealed, but thus far the extracted honey has not granulated. Can you tell me whence the nectar came and to what it owes its objectionable flavour?

In answer to Mr. L. S. Crawshaw (page 460), the bees in my observatory-hive used to build comb quite as fast by day as by night.—G. G. DESMOND, Camberwell.

[We cannot tell where the pollen you describe came from unless you send us a sample for examination, but the honey is a mixture of lime and lavender. Some honey takes longer to granulate than others, and a good deal depends on where it is kept, a cold place conducing to granulation more readily than a warm one.—ED.]

ENGLISH RUN HONEY AT SCOTTISH SHOWS.

[7993.] Would any of your numerous contributors say why it is that English run honey, as shown at shows in Scotland, lacks the consistency of the home product?

This in a large measure, I think, accounts for the success of the Scottish exhibitors at their own shows, as the difference in consistency between English and Scotch honey shown at Scottish shows is *very* marked.

The English exhibitor, with his much finer climate, should surely command a honey equal, if not better, on *all* points, yet what I state seems to be the reason for the failure of English produce to reach very high in the prize-list in Scotland.

Of course, on the other hand, the finer samples produced in England may not be shown in Scotland; but a desire for information presses me to ask the opinion of your correspondents on this matter.—A SCOT, Cumnock.

REPRINTING ARTICLES.

[7994.] Would it be asking too much to desire a reprint in the B.B.J. of the writings of "Lordswood"? These inimit-

able articles, so well remembered by all old readers, would lose nothing by reproduction, and they are probably the nearest approach to the work of Richard Jefferies of all past contributions. They are just as applicable now as they were when their gifted writer passed away, and the loss of Mr. H. J. Sands was regretted by few more than by the writer of this note.—JACK BANNELL, Leicester.

[We hope to be able to comply with our correspondent's request.—ED.]

BEE-LIFE ON THE BIOSCOPE.

A most interesting series of pictures of bee-life has been shown on the bioscope at the Palace Theatre, London, nightly

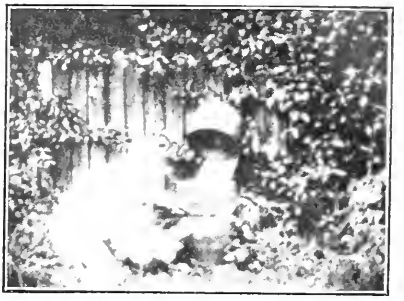
A NOVEL HOME FOR A SWARM.

for the past two weeks. They were taken during last summer near (and at) Mr. J. Bee-Mason's apiary at Bures, Suffolk, and form a striking example of the interesting yet amusing incidents encountered when removing bees from odd places. In one instance a truant swarm had taken possession of the inside of a scarecrow, while in another case the bees were found located in an

LADLING OUT THE BEES WITH A TEACUP.

empty beer-barrel, the open bung-hole forming the entrance to this unusual hive. In this case 138 lb. of honey was secured by Mr. Mason, as well as the bees.

The pictures (a few illustrations of which we give) are remarkably clear, and the various operations of removing the combs of brood and honey, getting the bees into the skep, and transferring into the frame-hive can easily be followed by the audience. They are well



A LITTLE SMOKE PUFFED IN AT THE BUNG-HOLE.

worth a visit from bee-keepers, to whom they will prove even more interesting, if they do not arouse his amazement, than to the uninitiated in bee-craft. As these pictures are to be shown in various parts of the country, many readers will no doubt take the opportunity of seeing them. During December they will appear at the Electric Theatres at Birmingham, Tunstall, Kirkgate, Leeds, Halifax, Burton-on-Trent, Burslem, Manchester, and many other places, including suburban London. We have also been in-

THE BEES COMPLETELY COVER THE BARREL.

formed that the pictures are to be shown in Germany, Russia, France, Spain, Italy, Belgium, and other countries on the Continent, and in South Africa, Australia, and New Zealand. Mr. Mason is to be congratulated on giving bee-men of other countries such an excellent opportunity of seeing how the work is done in England.

LECTURE ON BEES.

The concluding lecture of a series on agricultural subjects was delivered in the Public School, Strathdon, on Monday, November 28 last. The lecturer was Mr. A. Manson, Aberdeen and North of Scotland College of Agriculture, and hon. sec. of the new Aberdeen B.K.A. His remarks were illustrated by a magic-lantern. Mr. Manson gave a very interesting description of the habits of bees, and much valuable information as to their management. On the financial aspect of the matter, he was quite emphatic from his own practical experience that bees could be made to pay, and was quite convinced they would prove a very useful source of revenue to small-holders, especially in a district like Strathdon, where they would have two harvests—the clover and the heather.

At the conclusion, the chairman (Mr. Christie) congratulated Mr. Manson on his ability as a lecturer, and asked him to convey to the Agricultural College an expression of their thanks for the admirable course of lectures which had just terminated.

Mr. Manson briefly replied.—*Aberdeen Journal.*

Queries and Replies.

[4063.] *Winter Feeding.*—I have come into possession of a skep of bees. They seem a good, strong lot, but I do not know if they have enough stores for the winter. There is a small skep on the top. Should this be taken off or not? Can the bees be fed in any way now? I also have a frame-hive with six frames of bees and honey. Will they be strong enough to winter and can they be fed now? They have been neglected through their owner dying, and are not yet packed down for winter.—E. H., Farncombe.

Reply.—Remove the small skep from top and put on a cake of candy; also to the frame-hive a good cake of soft candy should be given. In both cases wrap up warmly.

4064.] *Dead Bees Cast Out.*—1. For the last week one of my stocks, which is a very strong one, has been putting out dead bees. They appear to me to be young ones which they are carrying out. As the bees were taking in pollen until well on in October, am I right in concluding that these bees are young ones which have been chilled by the recent frosty weather? 2. About six weeks ago I made some candy, which I laid aside for future use. It became damp, and I melted it again. Is this second candy harmful? 3. Do you approve of "Silver" entrances—tunnels down the alighting-board? If so, when should they be put on and taken off? 4. I wish to move one of my three stocks, but as the bees are flying almost every day I find it impossible to do so at present. Should they be closed in with perforated zinc for some time?—A. B., Ardrishaig.

Reply.—1. Yes. 2. The candy will be quite suitable for bee-food unless you made it too hard through re-boiling. 3. No. A board reared in front of entrance when snow is on the ground is all that is required; at other times leave the entrance exposed about 6 in. 4. You can move the bees at any time now, as only a few of them fly when it is warm. Do not confine them to the hive with perforated zinc. If you wish to make the operation absolutely safe, wait until frost keeps the bees indoors for about a week. You can then move them, and not a single bee will be lost.

Notices to Correspondents.

Devon (Oreston).—*Large Hives—Willow as a Bee-plant.*—1. The comb shows no trace of disease, but from its appearance and your statement regarding the stock we should say the bees have been starved. It is possible for this to happen in cold weather, even if honey is in the hive. 2. Hives of the dimensions you speak of are no use, and are only fit for firewood. If you try to use them you will find that they are a constant source of trouble and annoyance. 3. The ordinary willow (*Salix caprea*) produces pollen in profusion, but very little, if any, honey. The plant mentioned in B.B.J. is the willow herb—quite a different species.

Honey Samples.

C. W. (Hale).—Both samples are of very good flavour and colour. No. 1 is the better of the two, being nicely granulated; it is from charlock and clover. No. 2 is from clover, but is not so smooth in grain as the former.

B. J. E. W. (Ellesmere).—The honey is mainly from clover, but has been taken off in an unripe condition. It is now fermenting, and is granulating badly, being quite an inferior sample. There is no trace of lime flavour.

G. J. (Melton Mowbray).—The sample is a very good honey, gathered mainly from charlock. Honey from this source always granulates rapidly on being removed from the hive.

Editorial, Notices, &c.

BENEFICIAL RESULTS OF THE WORKING OF THE NEW ZEALAND APIARIES ACT.

In response to an invitation to attend a conference of bee-keepers in Victoria, Australia, and give his experience of the working of the New Zealand Apiaries Act, Mr. I. Hopkins, who was unable to attend, sent the following paper, which we reproduce, as it shows very satisfactorily what can be done by legislation to rid the country of foul brood:—

"The following case is a fair example of what our Apiaries Act is doing for commercial bee-keeping generally throughout New Zealand, and when it is taken into consideration that there are only two inspectors of apiaries—one for each island—the good results achieved up to the present time are the more remarkable.

"In the Waikato district, around Hamilton, Cambridge, and Ohampo, ranging from sixty to a hundred miles south of Auckland, bee-keeping on modern commercial lines was commenced in 1880, and flourished exceedingly well for a number of years. Box-hive bee-keepers also sprang into existence more or less all over the district, and when disease (foul brood) made its appearance in about 1886, the trouble commenced, and from that time forward, until the Apiaries Act was passed in 1907, it was one continuous uphill fight among the progressive apiarists generally without making headway against disease. Finally, after several years of unsuccessful work, they lost heart and let things drift. Some went out of bee-keeping altogether; one extensive bee-farmer removed his bees to another part of the North Island, while a few managed to keep a small number of colonies alive by dint of hard work.

"This was the condition of things in the districts named when I had the honour to be appointed to do my best to put them right. The districts were—to use a common phrase—rotten with foul brood, probably the worst in the Dominion, and I say this with a knowledge of that part since 1880, and after going through all but one of the chief bee-keeping centres in New Zealand. Before the Act came into force I saw boxes lying about from which the bees had died through disease, rotten combs exposed, other boxes with a few bees in being robbed, and every apiary (more or less) infected with disease.

"In September, 1906, I started the first Government apiary at the Ruakura Experimental Farm, close to Hamilton, in the midst of the infected district. There were fifteen colonies on the farm in frame-hives, all more or less diseased; these, with seventeen others I bought in the neighbourhood in the same condition, formed the nucleus of what is now a flourishing apiary. My young lady assistant and myself did our best to rid the apiary of disease, but the most we could do was to check it a little, as we were getting it again from outside.

"The whole of the following season the apiary was practically deserted, as my assistant and myself were engaged for seven and nine months respectively at the model apiary established in the International Exhibition, Christchurch. On our return we found every colony more or less diseased, some very badly, but being mid-winter we were compelled to wait until the following spring before we could treat them. In the meantime the Apiaries Act had been passed, enabling me to deal with some of the box-hive apiaries near at hand, and so commence to clean the district.

"On the afternoon of November 4, 1907, we commenced the treatment of the whole apiary of seventy-two rather weak colonies by removing every comb and shaking the bees on to bare frames. Five days after—November 9—they were again shaken on to full sheets of 'Weed' foundation, and the combs built in the meantime were melted into wax. In the second shaking some colonies were united, reducing the number to sixty-three all told. All the floor-boards and hives into which the bees were finally shaken had been cleansed and disinfected with Izal, new clean mats being given.

"A very cold snap came on at this time, causing us great anxiety, as the temperature was too low for comb-building, and it looked like losing all the bees. Warm sugar syrup was at once given them, and this started comb-building right away. Some Izal was mixed with the syrup, and my assistant soaked the mats in a solution once a week when changing them. I cannot say whether the Izal did any good or not; it apparently did no harm.

"My instructions for after treatment were to go through the hives very carefully once a week, and if any suspicious cells were seen to cut them out with the adjoining cells and burn them, and if there should be any reappearance of abnormal cells in the same hive to treat the colony fully. Result for the season—thirteen colonies had cells cut out, in three of which suspicious cells reappeared and were treated, while the other ten remained clean. The colonies were increased from sixty-three to eighty-four, and about 1½ tons of clover honey was taken.

"This brings me to the season just passed. All box-hives had been cleared out of the district, and the frame-hive

men took heart again and made every effort to rid their apiaries of disease, knowing that the former source of all their trouble no longer existed. At the beginning of the season two colonies in the Government apiary showed a diseased cell or two and were treated—no return. At the latter part of the season two others were treated, and all were clean when fixed up for winter early in May. The apiary now stands at 105 full colonies and ten nucleus. The season was very poor, but a fair return of honey was secured.

"To sum up the foregoing, here was an apiary of seventy-two colonies, all more or less affected by disease, some very badly, in one of the worst infected districts in New Zealand, and in two seasons (1908-9 and 1909-10), thanks to our Apiaries Act, we have been able to make clean both the apiary and district—the latter being now one of the cleanest.

"I have chosen this case as an example, not because it is any better than what has taken place in other parts of the Dominion, but because it came under my immediate supervision, and enables me to give full particulars. I, of course, expected good results from the working of our Act, but I never thought it possible that such marvellous results could have been brought about in so short a time. It would, I am certain, have been impossible without the power to do away with that curse of bee-keeping—the box-hive.

"The other day three box-hive bee-keepers were prosecuted and fined for having bees in box-hives on their premises. I think New Zealand stands in the unique position of having been the first country to legislate against box-hives, and the first to prosecute a box-hive man."

Obituary.

THE REV. W. E. BURKITT.

We regret to have to record the death of the Rev. W. E. Burkitt, Rector of Buttermere and hon. sec. of the Wilts Bee-keepers' Association, which occurred last week at his residence, Buttermere Rectory, near Hungerford.

Mr. Burkitt had been a bee-keeper for a great many years, and was one of the founders of the Wilts B.K.A. in 1881, the preliminaries being arranged in the Rev. Mr. Davenport's dining-room in Hungerford on the occasion of the Marlborough and Pusey Vale Agricultural Association holding their meeting in that town.

It was in this year that the first systematic county tour was attempted by any bee-keepers' association, and it was in Wiltshire that the experiment was tried. An expert lecturer was sent down on condition that the secretary of the Wilts B.K.A. should accompany him to study how the work was done. The tour was the means of doubling the number of members, and proved so satisfactory that the B.B.K.A. voted £30 for the furtherance of similar schemes in other counties.

The result of this tour induced Mr. Burkitt to go in for the expert examination, and he obtained his first-class certificate in 1883. He lectured and gave demonstrations at different shows, and did the expert work in the county for a number of years. He was one of the delegates appointed to represent the county association at the meetings of the Council of the B.B.K.A., and for some years he attended regularly the quarterly meetings of representatives in London. He was the author of a paper, "The Best Way of Instructing Cottagers in the Art of Bee-keeping," which he read on January 24, 1883, and was also a frequent contributor to our pages.

AMONG THE BEES.

DRONE-COMB IN SECTIONS.

By D. M. Macdonald, Banff.

The writer of 7969 (page 457) gives three good reasons for not encouraging the production of drone-comb sections. They do not sell well, and bring less money when placed on the market, while they would not enjoy much favour on the show-bench. I rather think there are other and perhaps better reasons for suppressing such a practice as "T. D." advocates. They would sell badly, pack badly, and travel badly, although I am not deeply concerned in proving any of these statements at present; but I would like to notice the claim made that worker-comb "entails extra work on the tiny toilers," and that more "indigestible wax" would be used. I would question the full truth of both statements. Is it not a fact that drone-cells are built on a thicker base, that their walls contain more wax, that the rim round the mouth is stronger, and that a heavier and more convex capping is employed? Further, is it not a fact that when they are used for a heavy honey-load the workers *heavily buttress* the cells with wax? Sum up all these extras, and it will be found, I think, that the difference in wax will be small. Then as to the labour, the amount extra on a sheet filling a standard section will not be great. Adopting drone-cell foundation in sections would, in my opinion, be a retrograde movement. The onus of proof to the contrary lies with "T. D." or any who may support him. I shall be pleased to weigh any such evidence produced, and further discuss the utility or profit of adopting drone-comb.

English Heather.—I am quite prepared to admit that true heather (*Calluna vulgaris*) grows in profusion in the Peak District, and that bees work well on it. I also consider that they can gather honey from it of which anyone can be "justly proud." I have seen them extra busy on the hills above Chatsworth, in the direction of Chesterfield, and south by Matlock. I have tasted the product and appreciated it highly. Further I am afraid I cannot go. I could not conscientiously call it a "perfect heather-honey"; neither would I bestow on it 100 per cent. in any exhibition. That for two reasons, if not three. In general, the range of heather is seldom so extensive but that other sources can be tapped at the same time. That would inevitably cause a deduction from the total marks. Then the nature of the soil (and climate, I think) produces a softer growth—more luxuriant in a way than we have in the North, and this yields *thinner* nectar, lacking in consistency. The altitude is in general lower in England, and the finest flavour and aroma must undoubtedly depend on the height above sea-level at which the nectar has been gathered. A most profuse bloom of the finest-looking heather on a low-lying moor will yield honey quite unfit for the show-bench; and bell-heather (either *Erica cinerea* or *Erica tetralix*) would fail on every single point to find favour when placed side by side with the product of the true heather. The subject might be discussed at next autumn Conversazione, with samples of each class standing side by side. I shall be pleased to send a sample.

Bible Bees.—Supplemental to my article on this subject in issue of November 3, I find the description of Canaan as a "land flowing with milk and honey" is also found in Leviticus xx. 24; Numbers xiv. 8-16, xiii. 14; Deuteronomy vi. 3, viii. 8, xi. 9, xxvi. 15, xxvii. 3, xxxi. 2; and Joshua v. 6; or in all twenty-two times. Its sweetness is further noticed—Ezekiel iii. 3: "It was in my mouth as honey for sweetness." Proverbs v. 3: "The lips of a strange woman drop as an honey-comb." Revelation x. 9: "It shall be in thy mouth sweet as honey"; also verse 10; and eating to satiety is mentioned in Proverbs xxvii. 7: "The full soul loatheth (even) an honey-comb." As a food we have further mention of it in Deuteronomy xxxii. 13: "He made him to suck honey out of the rock." Ezekiel xvi. 13: "Thou didst eat fine flour and honey and oil." Flour, oil, and honey, with other fruits of the land, are also mentioned in 2 Kings xviii. 32, 2 Chronicles xxxi. 5, Ezekiel xvi. 19; and as sources of revenue—Ezekiel xxvii. 17—we have "wheat, honey, and oil" mentioned. In 2 Samuel xvii. 29 we find amongst the presents brought to King David "honey and butter," &c. As an offering to their Lord, Leviticus ii. 11 commands, "Ye shall burn no leaven nor any honey." Finally, in Job xx. 27 we have its plentifulness figuratively pictured: "He shall not see the rivers, the floods, the brooks of honey and butter." We have "swarms of bees" mentioned—Judges xiv. 8. "Chased you as bees do," Deuteronomy i. 44; "Compassed me about like bees," Psalm cxviii. 12; "The bee that is in the land of Assyria," Isaiah vii. 18. Deborah, meaning a bee, is found as the name of two women—Rachel's nurse (Genesis xxiv. 59) and Deborah, a judge of Israel (Judges, chaps. iv. and v.).

Wax seems to have been well known as an article of commerce, and its melting power was appreciated—Psalm xcvii. 5: "The hills melted like wax"; Micah i. 4: "The mountains shall be molten and the valleys shall be cleft as wax before the fire." Wax tablets were employed for writing on. A sharp instrument was used, and when it had served its purpose the writing could be easily erased. Zechariah, in Luke i. 63, "called for a writing-tablet, and wrote, His name shall be called John"—one out of many examples which might be quoted.

I have to thank correspondents for kindly referring me to several of the above quotations. So long as Gadsby (7978, page 468) allows honey in the bread I will not differ from him; but I quoted from the old version, and I notice the revised one still retains "honey-comb" in the margin.

Recent Misprints.—On page 305, in speaking of bisulphide of carbon as a powerful fumigator I inadvertently introduced the word "lighted." It should have referred to sulphur only. Page 390: For a *stick*-shaver read slick shaver (Sam Slick). Page 437: For *I have* read "Than honey from the comb." Page 454: For *small* read "smell hollows."

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE B.B.K.A. LIBRARY.

A REPORT AND APPEAL FOR FUNDS.

[7995.] At the request of the Chairman of the Council, B.B.K.A., I have recently examined, catalogued, and valued every book and pamphlet in its library—a task

in which I have been much assisted by Mrs. Herrod. From the card-index catalogue now completed alphabetical catalogues will in due course be prepared and printed. These, interleaved for additions, will be issued to members at a moderate price.

It is now eighteen years since the first, and so far the only, list of books was compiled by Mr. G. Henderson, at that time librarian (see B.B.J., vol. ix., page 222), and since then the library has much increased. At the present moment it contains, exclusive of periodicals and not counting duplicates or more than one edition of any one work, 292 separate publications. The number of volumes, which I have not computed, is far greater. The value of the books, moderately estimated—not at bookstall prices, but at those which a long experience has taught me must be paid by a careful buyer—ranges from £6 in the case of the first edition, exceedingly scarce, of a seventeenth-century gardening treatise which also treats of bees, to practically nothing. The entire value is more than £57.

For many years past the library has not been properly housed, nor (perhaps unavoidably) has it received proper attention. Thanks to the kindness of the Editor of the B.B.J., this unfortunate state of things no longer exists. The books have found a home in his private office, 23, Bedford Street, Strand, where, if we do our duty, they will soon be provided with ample shelf-room, and be available to members of the Association for convenient inspection and reference. To effect this more help from members themselves is still necessary. In answer to the appeals of our hard-working secretary, a certain number of convenient book-cases, known as portable units, have been provided. These cost about 25s. each. Two more are needed for immediate use, and at least another two for impending requirements. Also about £5 for urgent repairs and binding and rebinding in strong library fashion. Some of the most valuable books are in bad condition or tending thereto; attention promptly given will save their lives for many years to come. It should be remembered, too, that treatises which have not now, and never will have, any importance in the market may still be precious to bee-keepers, and that if once allowed to perish they cannot without great difficulty, perhaps never, be replaced.

I confidently call upon my fellow bee-keepers to do their part. Let those who have not provided book-units or given anything towards establishing a library fund promptly send their subscriptions, big or little, to our librarian, Mr. W. Herrod, at the B.B.J. office. Under his care the library, if once set on a proper footing, will increase and thrive.

As soon as the catalogues have been published members will be able to note deficiencies, and perhaps make them good. In the meantime, I append the short titles of works that, once present, are now missing. Doubtless some of these are still in the hands of members who borrowed them and have forgotten all about it. Let us hope that their tardily-aroused consciences will induce them to send the books quietly back to Mr. Herrod.

Alley, Henry. "The Bee-keeper's Handy Book." Wenham, Mass., 1883.

Bevan, Dr. E. "The Honey-Bee." London, 1827. Also the same, revised by Major Munn, 1870.

Burkitt, Rev. W. "On Instructing Cottagers in Bee-keeping." B.B.K.A. publication, 1883.

Cheshire, F. R. "Bees and Bee-keeping," Vol. II., Practical. London, 1886.

Cheshire and Cheyne. "The Pathogenic History of a Bacillus (*B. alvei*)." Journ. Microscop. Soc. August, 1885.

Clerici, F. "L'Ape, sua anatomia, suoi nemici" (30 lith. pls., 12 by 7, with explanations). Milano, 1875.

Cook, A. J. "Manual of the Apiary." Chicago, 1878.

Hopkins, I. "The Illustrated New Zealand Bee-Manual." Auckland, 1881.

Huber, F. "New Observations on Nat. Hist. of Bees." London, 1841.

Huish, R. "A Treatise on Bees." London, 1815. The same, a new edition, 1844.

Kirby and Spence. "Entomology." London, 1860.

Quinby, M. "Mysteries of Bee-keeping Explained." N.Y., 1865.

Thomson, W. (Pan). "An Essay on Bees." Glasgow, 1882.—H. J. O. Walker (Lieut.-Col.), Leeford, Budleigh Salterton.

BEE-KEEPING AND THE KENT C.C.

[7996.] In continuation of my last letter (page 479), I will now venture to express my opinion of the bee-keeping instruction promoted by the Kent County Council. It consists in granting lectures in sundry centres of Kent, but it is not founded on any comprehensive scheme. Patches of the county here and there get costly instruction, but there is never an adequate attendance to justify the expenditure, as anyone may discover who cares to search the annual records at Caxton House. So much as to general criticism. Let me go back a little. About 1892, when the "whisky money" became available, the K.B.K.A. secured about £100 a year for lecturing work; subsequently the grant was doubled. Mr. Garratt, who was then our hon. secretary,

was given the whole of the grant for instruction. I am afraid this grant, like the famous apple of mythology, became a source of discord. We felt as a council that we were not giving value for the money. Our hon. secretary replied, very truly, that "he couldn't live on enthusiasm," and eventually resigned—not the emolument, but from the association. Mr. Brice then became hon. secretary. The membership went up by leaps and bounds; his energy and enthusiasm were unbounded. But the legal firm he had served for many years retired from business, and Mr. Brice had to start on his own account. This crippled the association, but no blame to Mr. Brice. I have no report to refer to later than 1899; the association was then going strong. In 1902 I made a personal appeal to county bee-keepers, and obtained £23 to hold a show at the Crystal Palace; that was our climax.

In 1905-6 Mr. Arthur Schofield, with prodigious and entirely gratuitous labour, obtained a complete census of the county bee-keepers and stocks, which was published in the shape of a chart showing at a glance the distribution of the bee-keeping industry all over Kent. Then followed the conference in Eynsford Drill Hall. That was undoubtedly the "flood" that ought to have "led to fortune," but we "lost our venture." The census, the conference, and the chart and postage had cost about £50, but for want of "the right man" to take up the work our labour was thrown away. No, I will not say that (Prov. xiv. 23). Moreover, "All things come in time to those who know how to wait"—so wrote Charles Bailly on the walls of his dismal cell in the Beauchamp Tower, September 10, 1571. In two years he was liberated! We have "lost our venture," but, like Charles Bailly, not our hope—not even in the Kent County Council!—E. D. Till, Eynsford.

[7997.] I see in the Bee Journal (page 466, No. 7976) reference is made to bee-keeping in Kent. With regard to an instructor, I have never seen one, although I know a good salary is paid to an instructor in bee-keeping by the Kent C.C. I should like to know what earthly good this is to a cottager like myself, as I have never had the pleasure of seeing him during the twenty years I have lived here. At the time the Kent and Sussex B.K.A. was given up I also hoped Mr. Herrod would have been allowed to take up the office of secretary, as I am sure the association would now be in a flourishing condition; but we never get anyone to cheer us up in this part of the county now.—G. D., St. Mary Cray, Kent.

WORKING OF THE BEE-DISEASES PREVENTION (IRELAND) ACT.

[7998.] It appears that over in Ireland an effort is being made to evade the Foul Brood Act, or put it out of operation in clover districts from June 1 to August 20, and in heather districts from June 1 to September 15. This is practically making the Act a dead letter. If there is six months' work for an inspector, how can he get it done in three months? Is he to sit twiddling his thumbs the best three months of the year? Further, in my experience fresh cases of foul brood usually show themselves towards the end of May—*not before*—and practically all signs of foul brood might have disappeared by September 15; so that to confine inspection to April, May, and October is to make the Act an utter farce. It is of little value to certify an apiary healthy in April, as the same apiary may be rotten with disease in June.

I would personally ten times sooner have my bees inspected when honey is coming in freely, even if three supers be on each hive, than when no honey is to be had, and bees start robbing as soon as a hive is uncovered. The disturbance caused by gently lifting supers to one side to look at brood-combs for ten minutes is practically nil, and to talk of three or four days of lost honey-making, and £20 loss from such manipulation, sounds to me like "bunkum," even in the case of a hundred-stock apiary. Then the inspector would probably reasonably assume all three-supered stocks healthy, and only disturb those with one super on.

Anyway, if across the water our friends do not want the inspector in June, July, or August, I just do not want him in April, May, September, or October; so the poor man will find it hard to please us all.—Buzz Bee, Royston.

WAX-RENDERING.

[7999.] My system, which, I think, will be hard to beat, is as follows: I break up the old combs into a thin, porous sack, and then place it in a large cast-iron boiler filled with water. When the wax is rendering I fix a handle into the axle-hole of a spoked iron wheel, and with this give the sack and contents a thorough pounding until every vestige of wax is extracted. The wheel also acts as ballast to keep the sack under the surface of the floating wax. I then either skim off the liquid wax or allow it to cool and cake before replacing a second time in a clean sack to undergo the same cleansing process. By this mode I have no difficulty in averaging 3 oz. per standard comb several years old.

Bee-men and Matrimony.—My countryman from Ussie Valley (7982, page 478) has tempted me once more to send a contribution on this subject. From what I can perceive (by reading between the lines) from his letter, he would like to enter the list of Benedicts, but, like the proverbial "canny Scot," he is suspicious about taking such a leap in the dark. He errs from his conclusions, however, as I have not yet "lost my tail" in the meshes of matrimony; therefore I am very sorry indeed that I cannot give relative experience. I am very pleased, however, to state that a most friendly and esteemed correspondence has been carried on ever since that famous advt. appeared in the B.B.J.—SCOT.

"ISLE OF WIGHT DISEASE."

A REPORT FROM AN ISLE OF WIGHT BEE-KEEPER.

[8000.] It may be interesting to give, for the benefit of your readers, my latest experience of the "Isle of Wight bee-disease."

I started the season on Whit Monday with one extraordinarily strong swarm of hybrids. This swarm came from a friend who had bought a stock of bees from me the previous year, and had successfully wintered them, although all my own had died in the autumn from the disease, and one skep of nearly black bees from the New Forest. The gardener, having taken a stray swarm in our grounds the previous year, put his in a skep at the end of the garden, entirely away from where mine were. These were exceptionally strong in the spring, and every day we were expecting to take a swarm, when suddenly the bees began to show symptoms of dysentery, and I wished to destroy them; but the gardener, being a man who —shall I say?—did not feel inclined to profit by past experience, would not do so—preferred to "give them a chance," as he called it. My own swarm of hybrids continued well for some time, and gathered 20 lb. of section honey before the bad weather of June set in. But, alas! that was all; and then they began to be sick, so I destroyed them, hoping I should thereby save any infection spreading to my New Forest hive. These latter bees worked well; they were out even on moderately wet days, and when the season was over I took the honey and fed them with syrup to winter on. I was watching them very closely, to be sure that they would winter without any signs of disease about them. Suddenly one day they all started on their early-morning flight in a westerly direction, having previously always gone eastward. Next day I noticed signs of dysentery on the glass roof of the greenhouse, which is just in front of them. To see if they had been robbing from the gardener's diseased skep lot, which was in a north-easterly direction from their situation, I stuffed the entrance of his skep up late at night, and then watched first thing in the morning. The bees came flying up over the garden; some went on their way to the Downs, but others—quite a hundred or more whilst I was watching—alighted on the skep and inspected the filled-up entrance, &c. This decided me once for all that one of the main dangers of bees taking the disease is from the food and honey stores of infected bees. I destroyed my strong and hard-working black New Foresters with a heavy heart.

The sickly handful in the gardener's skep are being carefully nurtured in the vinery, he being quite sure they will survive, and that we shall be able to start afresh with them in the spring! As for myself, I rather fancy I shall wait till next spring twelve months before starting again, since Dr. Zander distinctly said in one of his articles that the infection may last eighteen months in the ground and round about where infected bees have been kept, so that all the disinfecting of hives and bee-appliances, &c., avail nothing if this be true.—E. M. G., Ventnor.

BEE-NOTES FROM DERBYSHIRE.

[8001.] As no doubt some fellow bee-keepers will be glad to hear how we have fared with the bees in this part of England, I send a short report for insertion in B.B.J. The harvest of honey has not been a great one, and for the fourth summer in succession we have gathered no honey at Danesmoor; but I managed to get 120 lb. from four hives which I took six miles away to a tract of white clover, and I also got about 50 lb. from the heather, including about one dozen sections, so my results are considerably better than last year. My impression on watching the bees at work was that no honey was secreted except on the highest hills this year, which accounts for none being gathered down here in this valley.

I never remember stocks coming out so badly in spring. By the second week in June I had only one ready for supering (just then the clover was coming into bloom), and that stock itself gathered just half the honey secured from the clover. I then took it to the moors, and the bees filled the brood-nest solid (eleven frames), and put 15 lb. in the super besides. This emphasises the fact that stocks must be strong. Even by uniting two of the next best lots they did not make a stock nearly so good as the first. I also took one stock just as it was, and it got scarcely any-

thing, while another that I doubled swarmed about the second week in July; but fortunately they hived themselves in a spare hive I had placed there for the purpose. All the honey was gathered in the twelve days following June 9, and three days early in July, after which there was not another bee-day till the end of July. The bees were busy on a field of clover close to the moor, and they worked several days on that before heather came into bloom. I expected some to be stored in supers, but found they were empty. I took nine stocks to the moors, the heather blooming abundantly and the weather being good for a few days. The patch of bloom the bees fancied most was quite a mile away, and on one windy day thousands must have been blown down on that mile flight, for I never saw hives decrease in population so quickly before. One Sunday when I visited the hives one had two racks of sections on, with the bees fairly crowded in both racks. The next Thursday was a grand day—calm and bright; but Friday was a terrible day, and Saturday and Sunday were not much better. When I examined the racks I found the sections were completely deserted. I had over 100 sections on four hives; about ninety of them were partly filled, but only about thirteen were finished. Some of these sections had but a small quantity of honey in them, which could not be left in the combs till next heather season, as it would ferment. I had some difficulty in getting the bees at home to clean out the honey and store it in the brood-chamber without damaging the section, but found a plan at last, and they are now cleaned and packed away for another year. Stocks came back well provisioned for winter, most of them with brood on about five frames. One had six frames of brood, the hive being packed with bees. That was my late-mated queen of two years ago (see B.B.J., October 15, 1908). I was rather surprised at the condition of the stock, and at first thought it must be the work of a young queen, but on examining I found it was this queen. I thought in July, 1909, she was done for, as she stopped laying then, and I do not think she laid another egg till this spring. I had transferred her to a small lot of bees, and on November 20 I found her with only a few cells of honey left, so I put two frames of sealed syrup into the hive and left them to their fate. In May they were still struggling on with little brood, but during the spell of hot weather in July I found brood on five frames. There was another small lot in the next hive with about four frames of brood. I united these two lots, and by the time the heather came into bloom they formed the best stock I had at the moors, which accounts for them coming back so strong. I only wish I had had a few more late queens this year, for there were some splendid days for queen-mating about September 20.

I paid a visit to the Grocers' Exhibition this year, and the honey was a sight which all bee-keepers ought to have seen. I could not criticise the awards, as the winners' names were not on the cards; but what struck me most was the strong smell of the heather-honey—it seemed to pervade the whole show. The winning trophy was a grand sight. I consider any bee-keeper who takes first honours at this exhibition has learned his trade thoroughly.

I have been struck this year by the long time some stocks tolerate the drones after they come back from the moor. On looking through one hive brought back I found about 100 in it.

I for one hope the Foul-Brood Bill will never become law, and I think Mr. Woodley has kept bees long enough to know what is best. I have nothing to hide in my apiary either. There are not so many bees kept now, and there will be fewer if we have to accept this Foul-Brood Bill. Perhaps some of its advocates want to monopolise the trade themselves. If we can only get some good summers foul brood will not want a law to suppress it; it will move itself.—TOM SLEIGHT, Rose Farm Apiary, Danesmoor.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of November, 1910, was £2,421.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Experiments with Bees (page 446).—In the second experiment Mr. Oettle gave "an empty frame of worker-brood." Is that a slip of the pen for "worker-comb," or does it mean that the comb only contained very young brood, instead of hatching bees as before? I do not remember to have seen fully stated the arguments in favour of the queen's control of sex, and I should like to know them. Is there any reason why the process should not be automatic with a normal queen, and dependent upon the size of the cell-mouth? Drone-cells in which worker-eggs occur are reduced at the mouth, and so are queen-cells. Has any observer noted whether queen-cells are ever tenanted prior to this reduction of the opening? Mr. Oettle's experiment

does not fully bear out the interpretation that the eggs were transferred, the sex being determined automatically, unless he is able to point to such reduced cells in the drone-comb to which the queen had access, and in which accordingly the female eggs might be laid. It would seem to demand a too highly-intelligent conquest of difficulty to suppose that the queen-excluder might be called into service and the eggs collected on the other side. But if pressure upon or elongation of the abdomen were the cause, it is not easy to see how under-sized queens should be able to produce female eggs at all.

The Travelling Expert (page 451).—This much-appreciated (and sometimes much-maligned) worker has many difficulties to overcome. This is particularly the case if he be new to the round. After he knows, and is known, his work is very much lightened; hence there is every reason for the re-employment of a capable and tactful man. There should be a place for the owner's queries on the advice-card, and in the case of failure to meet, the expert might very well leave a card advising manipulations to be done to the hives. Thus: No. 1, re-queen. No. 2, O.K. No. 3, super, &c.; chalking the numbers upon the hives at the time. By the way, would there be any objection to the expert re-queening when necessary, if the queens were supplied to the members by the association at cost? I put it like this because cases have been known where an expert has so far forgotten his position as to push his own wares whilst acting as employee of the association, to the detriment of his expert work.

Combination (page 454).—"D. M. M." puts his experienced finger upon a weak spot here. But comparison cannot fairly be made between the bee-keeper and the bee. The one works for himself, the other for the community. The bee-keeper might more fairly be compared with the colony, which competes just as keenly with another hive, even to the extent of robbery. But how is the evil to be remedied? What would "D. M. M." advise should be done? Efforts at bee-keeping co-operation in this country have, I believe, mostly failed. Why? Can it be that, in spite of our boasted brotherhood, we do not possess the spirit of co-operation? It is true that some modern social creeds have their gospels based upon a selfishness which must destroy them; but it is no less true that communism, such as that of the hive, is impossible for the human race to entirely attain. The middle way of ownership and co-operation is no doubt the safest, and "D. M. M." might outline some practical plan for us. I note that he criticises a wholesale price of 8d. per section whilst commending a retail price of 10d. But the two prices do not compare unfavourably. Even if a middleman should retail at 1s. per section, 9d. would seem to be as much as the bee-keeper could expect from him. What does "D. M. M." consider to be a fair profit for the shop-keeper?

Are All Eggs Alike? (page 456).—Mr. Bullamore's argument is apparently to the effect that whilst the male principle may generally be dominant in the unfertilised egg, yet that there is no absolute certainty that this is so in all cases, and that an egg may produce a female parthenogenetically—that is to say, apart from any other stimulus than sufficient nourishment of the parent. I am unable satisfactorily to confute this view, but there is an insufficiency of data to uphold it, and in general qualified opinion is against it. I endeavoured to show, when dealing with Dr. Kuckuck's theories (vol. xxxvii., page 89), that the supposed food-stimulus would make alternation of sex without error highly improbable. We do not, however, yet know all that there is to be known of this, as of a great many other matters connected with the subject.

Izal and F.B. (page 464).—In view of the fact that this proprietary remedy is highly recommended by one authority, it would be interesting to know whether the ordinary bee-keeper has found it effective. Some years ago I gave it a fair trial, but without satisfaction, and I can quite believe that a number of similar remedies may prevent the occurrence of disease, but can they cure it in the hands of the ordinary bee-keeper?

The "Wells" System (page 464).—Is the perforated divider essential to this system? I doubt it, and believe that a solid divider will give similar results. If two stocks on five or six frames each be placed either side of a close-fitting division-board in an ordinary hive it will, I think, be found that in a day or two bees will run freely from entrance to entrance. (I have packed up several stocks for the winter in this fashion, and hope to report results next spring.) I do not know to what extent this would take place with a "Wells" hive having entrances at each end, nor how near the entrances would have to be should they face the same way. But I think the amicable relationship does not depend upon outside acquaintance, but upon the internal atmosphere which is common to both sides, in spite of an ordinarily well-fitting divider. I do not think the "Wells" system is a system for the beginner, but neither is it necessarily a failure in his hands: only it requires some understanding, and manipulations must have due regard to times and seasons.

MESSRS. A. W. GAMAGE'S APIARY.

The accompanying photo represents a portion of the "Holborn Apiary," now run by Messrs. A. W. Gamage, Ltd., of Holborn, E.C., and is situated at Finchley. It is under the control of a well-known apiarist, who was county expert and secretary to the Suffolk B.K.A., and on the lecturing staff of the East and West Suffolk C.C., and who also has taken a keen practical interest in the Essex B.K.A. for many years past.

Considering the unpropitious weather of the past season, the "Holborn Apiary" has shown good results compared with many districts. Queen-rearing and the production of English bees (known for their prolificness and working propensities) are the chief features of the apiary, which by successful and scientific manipulation promises to be a great success and to meet the requirements of a rapidly-growing industry. The majority of the hives in use are of the "W.B.C." pattern, which have been found the most satisfactory for stock-breeding.

The "Holborn Apiary" will be open to visitors *by appointment*, and novices wishing to take up such an interesting and profitable hobby should get into communication with the manager of the Bee-keeping Appliance Department at the establishment of Messrs. A. W. Gamage, Ltd., Holborn, London, E.C.

THE "HOLBORN APIARY," FINCHLEY, N.

Queries and Replies.

[4065.] *A Mysterious Intruder.*—As a regular reader of the B.B.J. for some years past, I am taking the liberty of sending you the accompanying small collection of what seems to me to be a mixture of "munched" bees and honey-comb, and to ask you kindly to tell me who or what is the rascal who is responsible and how shall I best get at him before he eats his Christmas dinner in that particular hive, of which at present he is apparently a resident, or, it may be, a nocturnal visitor. Three times within the past fortnight I have removed as much of the "stuff" as I now send you from behind the entrance, and if our friend goes on I begin to think he may spend the winter in luxury in the hive, but leave it in the spring with neither bees nor combs in it, to say nothing of honey; and then—oh, dear me!—the poor bee-keeper a victim again! What is it, Mr. Editor, if you please? I fancy it may be a mouse, but if so he (or she) must be a very small one to get in at the entrance of the hive, which is, of course, packed up for the winter, and the doorway is reduced to about an inch wide. If a mouse, I thought the bees themselves would very soon see to and dispose of him with their stings, &c. The hive

is strong, or rather, I should say, was strong, and well provided with stores when I packed up; but if friend mouse goes on "munching" both bees and comb they must necessarily get less. How can I best dislodge him at this season, for dislodge him I must? Notwithstanding the very bad season, this same hive gave me 35 lb. of surplus honey in sections, and I left the remainder of the honey and put on a 2-lb. box of bee-candy when we "happed" up for the winter, and I hoped to have them come up strong again in the spring. I congratulate you much on the great help you are to amateur bee-men like myself through the pages of your most interesting paper, and I wish you and it, and all your concerns, continued success, and same for all your readers.—G. G. H., Broughty Ferry, N.B.

Reply.—From the débris you send it is evident that there must be a mouse in your hive. You should take the opportunity of a warm, sunshiny day to lift the hive off the floorboard, and if the mouse is there he would probably run out. The entrance should be reduced both in width and height, as there are many mice that could easily get through a 1-in. opening. The height of the entrance must be reduced to $\frac{3}{8}$ in., or $\frac{1}{4}$-in. mesh wire net in front will keep out mice. The packing should also be examined, as sometimes mice will make their nests in it. They disturb bees in winter, besides doing much damage to the combs. We thank you for your appreciation of the B.B.J.

WEATHER REPORT.

Westbourne, Sussex.
November, 1910.

Rainfall, 4·50 in.	Minimum temperature, 26° on 6th, 9th, 12th, 21st, and 22nd.
Above average, 1·51 in.	
Heaviest fall, ·77 in. on 27th.	
Rain fell on 18 days.	Minimum on grass, 20° on 22nd.
Sunshine, 72·6 hours.	Frosty nights, 20.
Above average, 4·4 hours.	Mean maximum, 46·2.
	Mean minimum, 31·8.
Brightest day, 2nd, 5·9 hours.	Mean temperature, 39·0.
Sunless days, 9.	Below average, 4·3.
Maximum temperature, 53° on 6th, 7th, and 10th.	Maximum barometer, 30·176 on 10th.
	Minimum barometer, 28·896 on 7th.

L. B. Birkett.

NOVEMBER RAINFALL.

Total fall, 5.45 in.
Above average, 2.84 in.
Heaviest fall in 24 hours, .97 in. on 27th.
Rain fell on 23 days.
Total fall from January 1, 36.14 in.

W. Head, Brilley, Herefordshire.

Notices to Correspondents.

F. S. (Carnforth).—*Name of Insect.*—1. The insect you send is the male of the winter moth. It is one of the geometric moths; the females of this genus have only rudimentary wings, and are not able to fly, but creep up the stems of trees to deposit their eggs. The caterpillars of this moth are injurious to almost all our fruit and forest trees. 2. The mild day has no doubt brought out the bees, as they usually avail themselves of a fine, warm day for a cleansing-flight and to clear out any dead bees there may be in the hive.

Heather (Pontyclun).—*Heather as Bee-forage.*—1. The flower is ling (*Calluna vulgaris*), from which the best heather-honey is gathered. 2. It would pay you to move your bees to the heather, as bee-keepers do in the North. 3 and 4. Sorry we cannot say. The returns vary according to climatic conditions, and for other reasons such particulars would be very difficult to ascertain.

Channel (C.I.).—*Bee-farming and Selling Honey.*—Unless you have had considerable experience of bee-keeping, it will be unwise to launch out on a large scale as you propose. A much better plan is to increase gradually as you gain experience and find you can manage more bees. There is always a market for good produce put up neatly and in an attractive form. One method of obtaining sales is by exhibiting at popular shows; another by a personal canvass of grocers and dairy shops, and also by advertising in our columns.

Honey Samples.

Scot (Scotland).—Both samples of honey are unusually light in colour, and their consistency leaves nothing to be desired; indeed, we cannot see how they could be surpassed on this point. Both are absolutely devoid of flavour and aroma, and on this account would certainly be beaten on the English show-bench.

W. H. (Swaffham Bulbeck).—A good sample, mainly from sainfoin.

W. H. Y. (Chard).—The honey is of good quality, gathered mainly from clover, with a slight admixture from the limes.

Forester (Hants).—Though your section is a very nice sample of heather-honey, principally gathered from ling, it is not without an admixture from bell-heather (*Erica cinerea*), which has thinned the consistency.

Suspected Disease.

Persevere and W. G. H. (Hants).—We regret to say the bees are affected with "Isle of Wight disease."

Editorial, Notices, &c.

CHRISTMAS.

As Christmas Day will have passed before our next number appears, we take the opportunity of expressing the good old-time wish that it may be a day of joy and happiness in every "home of the honey-bee" in which the B.B.J. is read, and that the coming season may be a successful one.

REVIEW.

Langstroth on the Hive and Honey-Bee. Revised by C. P. Dadant (published by Dadant and Sons, Hamilton, Ill., U.S.A. Price $1.20—5s.).—Since the death of C. Dadant in 1902, with whom he was associated in revising Langstroth's classic book, the work of revision has fallen entirely on C. P. Dadant, and in this twentieth-century edition, as it is called, there is recorded the most recent information of the improvements and advances made in the science of bee-keeping. Much progress has been made, and Mr. Dadant has found it necessary to add new matter to bring the work up to the level of modern progress. He has retained as much as possible of Mr. Langstroth's writings, and has intelligently interwoven the new matter with them. A good feature of the book is that it does not recommend the numerous modern fads, which too often prove to be a delusion and a snare. The reviser says: "Experienced bee-keepers will notice that we do not describe many new implements. It is because we believe in teaching beginners to use only that which has been thoroughly tested and is unquestionably good. Many new things will not stand the test of long years of practice. As an instance, reversible hives were the craze, and were praised in every way; we gave them a mention in our pages, with a warning against their use. Reversible hives are now almost entirely abandoned." Mr. Dadant is well known as an authority on bee-keeping, and this new revision shows the painstaking care with which the editing has been done. The work consists of upwards of 500 pages, and is fully illustrated, there being no fewer than 229 figures in the text, besides a number of plates and portraits of the leading bee-scientists of the world. We wish the work the same success that previous editions have had.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on November 15 at 11, Chandos Street, Cavendish Square, London, W.C. Mr. W. F. Reid presided, and there were also present: Messrs. A. Richards, T. Bevan, A. G. Pugh, G. H. Skevington, J. B. Lamb, E. Garcke, E. Walker, E. R. Stoneham (Crayford), and W. Herrod (secretary).

Letters expressing regret at inability to attend were received from Miss Gayton, Messrs. T. W. Cowan, O. R. Frankenstein, J. N. Bold, C. L. M. Eales, H. Jonas, G. Hayes, Rev. A. D. Downes-Shaw, and Rev. H. R. N. Ellison.

The minutes of Council meeting held October 6 were read and confirmed.

The following new members were elected: Mr. W. W. Stallworthy, Copse Road, Hamma, Haslemere; Mr. W. G. Fischer-Webb, "Rosario," Tirlemont Road, South Croydon; Mr. J. L. Taylor, Wonderboom Apiary, Boom Street, Gezina, Pretoria. The application of the Aberdeen and District Bee-keepers' Association for affiliation was granted.

The report of the Finance Committee was presented by Mr. G. H. Skevington, and it was resolved that payments amounting to £84 2s. 3d. be made.

According to notice, Mr. J. B. Lamb moved the following resolution, which was seconded by Mr. E. Garcke: "That it is desirable that arrangements should be made for a full consideration of the regulations under which certificates of proficiency in bee-keeping are granted by the Association."

Mr. Lamb explained that it was at the unanimous request of the members present at the last meeting of the Council that he brought forward the resolution, so that an expression of opinion on the matter might be placed on the minutes of the Council. After a full discussion of the resolution, and letters from Mr. Cowan having been read, it was felt that it was hardly expedient to deal with the matter at the present time, in view of the fact that a scheme for reorganising the Association is under consideration. At the request of the meeting Mr. Lamb expressed his willingness to withdraw the resolution, to which course Mr. Garcke agreed.

After discussion it was resolved that the W. B. Carr Memorial Fund be invested in Consols, as previously intended.

The report of examination for certificates of the second class was received, and it was decided to grant them to the following: Rev. G. E. H. Pratt, Messrs. G. Mason, C. E. Billson, W. Sells, D. M. Macdonald, G. W. Judge, F. P. Cheesman, and I. Farquharson.

A cordial vote of thanks was passed unanimously to Mr. T. W. Cowan for so kindly undertaking the arduous duties of examiner.

The Crayford and District Bee-keepers' Association submitted the names of

Messrs. J. E. Smiles and G. W. Judge as their representatives to Council for 1911, and the same were accepted.

Arrangements were made for an examination for third-class certificates in South Africa.

The next Council meeting will be held on January 19, 1911, at 23, Bedford Street, Strand, London, W.C.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8002.] Again the hand of Death has removed one of our old, respected friends, the Rev. W. E. Burkitt. One by one the elders in the craft pass away, leaving bee-keeping the poorer by their removal. It was at the Pusey Vale Agricultural Show at Hungerford in 1881 that I met Mr. T. B. Blow, the Rev. W. E. Burkitt, and the Rev. E. Davenport for the first time, and our friendship has continued till the passing away of Mr. Davenport and now of Mr. Burkitt.

Again may I say a word for the welfare of the bees he loved so well? Amidst the feasting and good fellowship which will prevail at Christmastide do not forget your bees. If they are well provisioned and domiciled in dry hives, well and good; but if the almost incessant rain has soddened the wraps, and you have any doubt of the condition of the stores, put on dry coverings and give a big cake of good soft candy, wrapping it up with some dry, soft material, so that your poor, defenceless bees may not at this season of the year die of starvation.

There appears to be a plague of mice in this part of the country; a bee-keeping friend of mine has caught sixty-two since Michaelmas near his hives—some in the hives. I myself have caught a good many, several being found among the wraps on a few straw skeps I have, and some in the covers of one or two box-hives I bought of a widow of an old bee-keeper. He used to get a considerable number of sections off these boxes by having a big square hole, then putting the racks over this hole and wrapping them up warmly. These boxes are a stepping-stone from the skep to the frame-hive, but my old friend was not in a position to purchase the latter, and the boxes, with old sacking and other material for a covering, form a harbour for mice, as do the straw hackles used to protect skeps from the weather.

Wax-rendering (7999, page 497).—Will our friend "Scot" tell us if his method of extracting wax gives a fair marketable sample, or do the iron boiler and iron presser darken the colour? Years ago I used a similar method in a copper boiler with a wooden presser, but my boiling never extracted the wax to my satisfaction. The last two sunless summers have curtailed the usefulness of my solar wax-extractors, but my thermo-solar extractor works much better than with solar heat only.

Our bees had a good cleansing-flight at the end of last week, after a rather long confinement to hives, first by a spell of cold and then by continued wet weather.

The near approach of Christmas will again engender those kind thoughts and wishes which we extend to each other on this the greatest feast of Christendom. May I again extend to all in the craft who are readers of our B.B.J. the old, old wish of a "Happy Christmastide"?—W. Woodley, Beedon, Newbury.

DISEASES OF BEES.

[8003.] "*Isle of Wight Disease*" (page 478).—Assuming the "Isle of Wight disease" to be contagious, it was a particularly foolish action to keep the disease alive by sending stocks to the island. As to its contagious character, however, we have no evidence, and (so far as my knowledge extends) all attempts to communicate the disease, either with bees, honey, appliances, or bacilli, have been unavailing. When the disease manifested itself on the mainland it did not sweep across the country from a southern point of infection, but sprang up in widely-separated districts.

During last season I made some attempt at an investigation of the disease, and the conclusion I arrived at was that the cases that came to my notice were, like dysentery, the result of improper food. In common dysentery yeasts are usually the exciting cause. In "Isle of Wight disease" fungus-poisoning is the real nature of the malady. Some of the pollen-grains present in the bowel show discolorations suggestive of fungous action, and mixed with the pollen are large numbers of fungus spores and occasional mycelial fragments. Cultures give numerous growths of *aspergillus*, *penicillium*, &c. If these are fed back to the bees in syrup a paralysis of the wing muscles is produced, and the bowel becomes distended with the syrup. The

action of fungus poisons on the muscles is well known. I would suggest that most of the cases recorded are brought about by the attempts of the bees to manufacture chyle food from pollen which is contaminated with fungi and fungus spores. Wet weather has favoured these fungi, which are present both in the stored pollen and in the honey-substitutes that the bees are compelled to gather. Sulphur probably effects an improvement by killing the unsealed brood, and thus lessening the demand for chyle food.

A successful honey season would probably mean the cessation of all reports of the malady.

The suggestion of "E. M. G." (page 498), that the trouble is really the malignant dysentery described by Professor Zander, and due to *Nosema apis*, is unlikely. The appearance of this organism in its known stages is so very distinctive that I do not believe its presence could have been overlooked by both Mr. Imms and Dr. Malden.

Legislation (page 488).—The difference between the destruction of mosquitoes for the prevention of yellow fever, or the rat to safeguard against bubonic plague, and that of the destruction of hives for the prevention of foul brood, is that in the first two cases we have an extensive knowledge of the diseases, due to investigation in the disease areas, while in the latter case our knowledge is very imperfect.

If the description of foul brood is correct, the continuance of the disease in countries where foul brood laws exist is inexplicable. I look upon this continuance as a sign that our knowledge is at fault, just as the failure of quarantine and disinfection showed that our knowledge of yellow fever was at fault until the mosquito as a factor was hit upon.—G. W. Bullamore, Albury, Herts.

FEEDING THE YOUNG LARVÆ.

[8004.] It is well known to the student of modern bee-literature that the young worker-larvæ are fed for three days after issuing from the egg upon chyle food—which is digested matter from the chyle stomach—to which is added a secretion from the supra-maxillary glands situated in the head behind the eyes of the nurse-bee. We learn also that these glands—which belong to what is termed System I.—are only developed in the worker, and are in her active and efficient only during about fourteen days after she issues from the cell. Their purpose evidently is to provide a digestive stimulant necessary for the larvæ. The drones and the queen do not possess these glands, as they are not called upon to feed the young. The young worker at the end of a fortnight gives up her duties as a nurse, she being no longer capable of performing the office owing to the degeneration of these glands. A point now arises upon which I should be glad to get information. It is probably dealt with by some writers; if so, I have missed their solution of the problem. In the spring the young brood is fed by bees that must be some months old, when their glands in System I., according to theory, have become inefficient; yet the grubs are nourished and developed properly. How does this occur? If a secretion from these glands is essential, and those glands have atrophied, theoretically the work could not be done, and the colony ought to perish. I have a theory upon the point, but as it is no more than theory I abstain from airing it at this stage.—A. D. Downes-Shaw.

KENT BEE-KEEPERS AND THE ASSOCIATION.

[8005.] I think the hour is ripe to make a few comments upon the state of affairs in Kent. Of the *status quo* before the end of 1904 I am ignorant, as I only came into the county at that time. After the old association died the Wye Gardeners' Society incorporated a show of honey and bee-products with its annual exhibition of flowers, fruit, &c. This took place in 1902, and I think the show has now reached dimensions which do great credit to its early promoters. That the situation is not ideal one must admit, but in this world it is impossible to have everything "just so," and the experience bought annually by the local stewards has enabled them to carry out their duties in a very efficient manner.

Owing entirely to the energy of Messrs. Till and Schofield, a capital meeting of enthusiasts was held at Eynsford in 1906, and a provisional council, consisting of fifteen persons, was elected to carry out the scheme of resurrecting the county association. Mr. Schofield, acting as secretary, called a meeting in London. The following attended: Messrs. E. D. Till, A. Schofield, E. Longhurst, H. Leeds, F. H. Olliver, and the present writer. There was some discussion as to the lines upon which it was advisable to work; it was finally decided to start local associations from some fifteen centres. Mr. Schofield explained that his private business would prevent him continuing to act as secretary, and I volunteered to take things over until a permanent man was unearthed. I called a meeting in London early in 1907. One gentleman only, I think, wrote his inability to attend, and only two turned up. I was naturally so disgusted with the want of keenness displayed that I determined I would not

waste time and money in a similar manner again, and that whatever was done should be done from my own home and off my own bat.

The following districts were, by request, allotted to the under-mentioned gentlemen for organisation:

Bromley Union of Parishes.—Dr. Giddings, Messrs. F. H. Olliver, A. Schofield, and R. Powell.

Dartford Union.—Messrs. E. D. Till, E. Longhurst, G. Sander, and J. M. Bates.

Kentish London and Suburbs.—Messrs. T. Armstrong and H. Leeds.

Crayford already had an association. In 1908 I started an association at Maidstone, now known as the Mid-Kent, and shortly afterwards another, with Ashford as its centre. I believe Bromley made a move last year. There is no report forthcoming in connection with Dartford and the London suburbs, which were specially bespoken. I have, by means of private correspondence and application in the pages of the B.B.J., tried to obtain local secretaries for the other branches, but without success. A number of ladies and gentlemen wrote kind letters of approval, but their energies could not reach the working stage. Now Mr. Herrod comes forward with a generous offer to act as secretary. No one has jumped at him—perhaps that was my task! Well, I unhesitatingly do so now. But—what line is it going to take? I have the temerity to think that county associations (one or two excepted), with their annual meeting, balance-sheet, vote of thanks to the chairman, and little else, are becoming out of date. We want a properly-paid secretary in London, such as Mr. Herrod, with clerks under him, who will organise the whole of England. Local associations should be started at various centres where members could meet periodically for advice and discussion. A county executive could be chosen to conduct the show department. I would have the whole scheme under the B.B.K.A. Thus brains in the head would foster blood in the limbs, and the life thus generated would redound to the credit of both. Surely the time has come for the Board of Agriculture to make a small grant—say £250 per annum as a start. If this body also drew up a recommendation to the County Councils to the effect that it was now advisable to help forward systematically a craft which has long been recognised as the best-paying minor industry in the country, funds should not be long wanting to carry out the scheme in an efficient manner. There are forty counties in England alone; £25 from each would produce £1,000. It is not a great deal to ask. In addition to these sums there would be a *per capita* amount to reach headquarters from each branch. One of the difficulties of local centres is to get good papers read to start discussion (there is plenty of the latter where two or three bee-keepers are joined together). Now when centres are plentiful there would be no difficulty in arranging programmes for experts to travel round on definite subjects. They would be put up and given a hearty welcome.

Whilst drawing this somewhat flimsy outline I have almost strayed away from the county, but Kent did hope, and does hope, that some such scheme as the above may quickly come into existence, and claim the Garden of England as its first shareholder; then only will the B.B.K.A. occupy the position which, in adverse circumstances, it has struggled manfully to reach. It is absolutely necessary that small interests shall be put on one side and only the good of the majority considered. I have merely touched the fringe of this subject; your readers will be able to fill the gaps for themselves. My object is to keep alive a subject which is of vital importance to the whole bee-keeping industry of this country.—H. R. N. Ellison, Hothfield Rectory, Kent.

FOUL BROOD ACT IN THE TRANSVAAL

[8006.] Owing to the Foul Brood Act having come into operation in the Transvaal Province on December 24 last—which excludes the importation of comb-foundation, also honey, beeswax, used bee-hives, &c.—we found it absolutely necessary for the furtherance of bee-culture, and for the progress of our business in apicultural appliances, to import the necessary machinery for the manufacture of brood and super foundation.

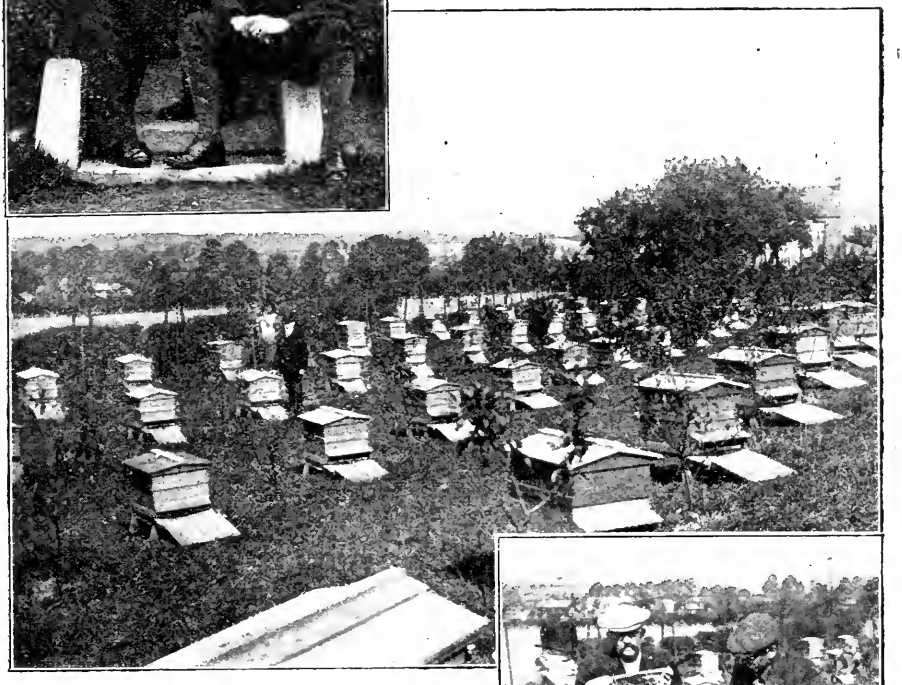
We enclose herewith samples of both kinds, and shall feel greatly obliged if you will give your opinion on the same in your B.B.J.

We forwarded samples to the Department of Agriculture, Bloemfontein, O.F.S., and they reply under date October 27, giving their bee-expert's remarks as follow: "The samples of comb-foundation made by Messrs. Cairncross and Zillen, of Pretoria, seems to be of good quality and texture, and well impressed, and seems quite equal to imported foundation."

The writers have upwards of seventy colonies of South African and Golden Italian bees, which are gathering honey freely, and from which we hope to secure a good harvest this season. Thanking you in anticipation.—Cairncross and Zillen, Pretoria.

[The samples of comb-foundation sent are of fair quality. The wax, however, is not so tough or good as that produced

(*Continued on page* 509.)



"D. M. M." "AMONG THE BEES" AT LUTON.

A MODEL APIARY.

By D. M. Macdonald.

For over twenty years I have lost no opportunity of extending my knowledge of apiculture in every way possible, and during that period it has been my good fortune to see a very large number of apiaries all over our islands. Of these the one which undoubtedly can best lay claim to the above title is that of Messrs. Herrod and Stewart, Luton, Beds. From every point of view it has been established and carried on on model lines, the endeavour being to have it in every way as complete as possible. The situation is an ideal one, as the site is on the gentle slope of a hill, well sheltered from the east and north, and it is in the centre of some very rich nectar sources. Some of these in early spring are charlock, and later various clovers, especially sainfoin grown for seed, with limes and charlock to follow.

As may be gathered from the accompanying illustration, the hives are mainly of the "W.B.C." type, and all are of first-class workmanship, with every corresponding part perfectly interchangeable.

[*Photographs by Thos. Herrod, Sutton-on-Trent.*

"NOW, WHERE IS SHE?"

The *tout ensemble* presents a very pleasing picture, arranged as the hives are in a series of well-laid-out rows on the quintox principle, with ample space

allowed between individual colonies as well as between rows; and to aid the picturesque appearance the young bush, apple, and pear trees, fast growing up into a fine orchard, are so arranged that they lend themselves not only to adorn the scene, but also to present well-defined landmarks for the busy toilers, and afford a welcome shade in sunny weather. All hives are as bright as fresh paint can make them, the shade not being too bright a colour, as that would tarnish readily. Inside as well as out the hives are perfect in construction, and, as might be anticipated, the colonies inhabiting them are all of the "lustie and stronge" order. The bees noticed were mainly of the native variety, and very gentle as far as I experienced; while of their industry I can speak with respect from a lengthy personal knowledge. In addition to these full colonies, ordinary and baby nuclei are here, there, and everywhere in their season, queen-rearing being an important branch of the business. A remnant only of the "old order" is found in a corner; but these straw skeps are only retained for examination purposes, I was pleased to learn.

The management of the apiary is mainly in the capable hands of Mr. L. McNeill Stewart, a countryman of my own, and one who is proud of his Northern origin. At present it is really a school of apiculture, and year by year student helpers pass from its portals to all parts of the world, well fitted to manage any apiary. The trade in bees, queens, and honey is an extensive one, and is annually on the increase. Luton is an excellent centre, and as it is in close touch with the Midland, Great Northern, and North-Western railways, it affords special facilities for the quick dispatch of orders all over the country.

The apiary was visited by the delegates from various foreign countries attending the Franco-British Exhibition Conference, and the visitors expressed themselves as highly delighted with its many good points. Our late Junior Editor, in whose honour it was named the "'W.B.C.' Apiary," took great pride in its establishment, and looked on it as the best specimen of a modern apiary in the country, and it is shown in the latest edition of Mr. Cowan's "Guide Book," page 193, as a model British apiary.

Mr. Herrod has been a worker in wood from his youth up, and therefore, as we should naturally expect, the honey-house, store-room, workshop, and "snuggery" are models of what these places should be. Everything is admirably arranged; there is a place for everything, and everything is in its right place. The honey-house is commodious, and provided with every requisite. The store-room is so arranged that nothing can "go lost," because every tool, implement, or appliance is assigned a place of its own, and is always there when required. The workshop is fitted up in the same perfect way, and is provided with an outfit of tools any worker in wood might not only admire, but envy. The fumigating-chamber I must describe fuller at some future time. What I have designated the snuggery is an apartment unique of its kind perhaps in England. Many a profitable hour is spent there in studious retirement. A full set of photographic appliances shows one bent of Mr. Herrod's mind, and a splendid collection of over 600 lantern-slides, always being added to, testifies to many hours of arduous labour. A powerful microscope reveals a second fascinating leaning, and one can only imagine the thousands of queens, workers, drones, and others of the Hymenoptera, or their various parts, patiently inspected under its illuminating magnifiers. On shelves round the room there is a display of sample bottles of honey containing not only rare samples from home sources, but also typical specimens from almost every part of the world.

Mr. Herrod must be a man of superabounding energies, and even then must model his life on that of the busy bee to overtake his manifold duties. As is well known, he is secretary, expert, librarian, and lecturer to the British Bee-keepers' Association. He is also lecturer at Swanley Horticultural College, to over half a dozen County Councils, and to any number of county and district associations. He gives lectures and demonstrations at innumerable shows, and has had the honour of lecturing before the King and other members of the Royal Family and several foreign royalties. His services are in much request as a judge at honey shows, and he is adviser to the Colonial Office and *The Bazaar, Exchange and Mart*. To show further his many-sidedness, he can make a hive as perfect in finish as any regular workman, and he is a very good amateur photographer. He possesses gold, silver, and bronze medals, and is a first-class expert of the B.B.K.A. Although he thus carries his blushing honours thick upon him, he is a most modest man. As if the above recorded duties were not in themselves enough for any one man to overtake, he has been manager of the B.B.J. and *Record* for the past year.

Mr. Herrod is fortunate in having a better half in full accord and sympathy with all his undertakings, and so I shall round off my account of this Model Apiary by merely mentioning that Mrs. Herrod is a model bee-keeper's wife.

(*"Foul Brood Act in the Transvaal," continued from page* 506.)

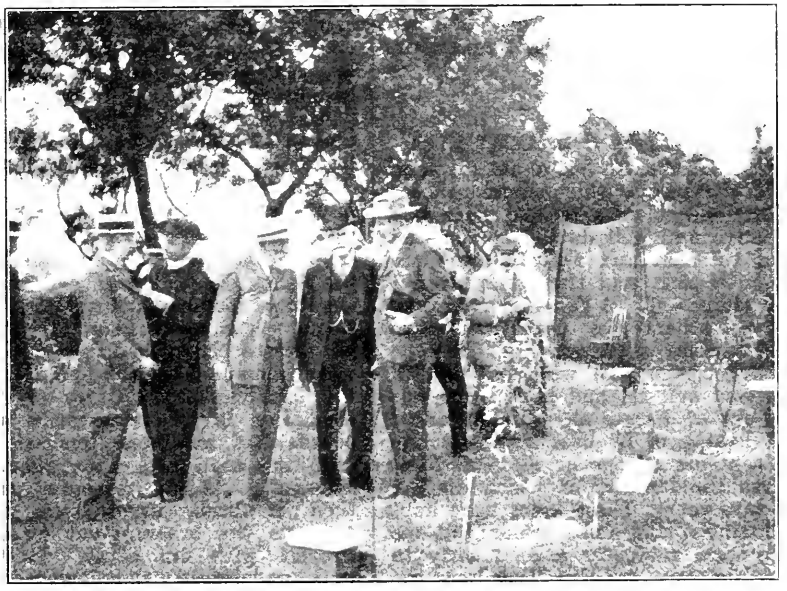
in this country. The foundation is irregular, one of the lozenge-shaped bases being much thicker than the other two. This is owing to improper adjustment of the machine, and will probably be avoided when the operator understands adjusting it properly. The thinnest foundation sent is too thick for sections.—ED.]

POSITION OF HIVES PREVENTING SWARMING.

[8007.] I quite agree with the writer of letter 7985, page 479. My bees have been in a similar position since (my father's time) 1891, and I have no recollection of a cast issuing, and only the strongest hives swarmed, and even then it only happened when through some cause or other we had overlooked giving a little more ventilation. Also, by using white-painted alighting-boards, which catch the morning sun in the summer (they are removed in winter), and which reach to the ground in a gentle slope, the reflection brings the bees out as early as when the hives face south. I find our English blacks are out an hour earlier in the morning and about half an hour later in the evening than Italians, and I have seen them working in early spring (all the hives had stores and syrup feeders) on days when the Italians would not stir out. As all the stocks behaved the same, according to race, and were in equal positions, I think only race can have caused the difference. Have others noticed similar occurrences? Last summer I saw the blacks flying at 5 a.m. towards the end of June, and as late as 8.30 p.m. on the evening of the same day. My Italians had all gone indoors, and not one was even on the doorstep. I may say the limes were in bloom at the time.

Bee-keeping Examinations.—May I remark, although you have closed the discussion proper, that the absence of skeps in our neighbourhood has alone prevented me applying for a certificate (*pour mon amour-propre*)? I have never looked into a skep, nor do I know how to start bees in one, nor do I want to have one about the place. Can you tell me whether there is any place in London where I could get practice in driving? On the other hand, I know foul brood when I see it, even in its early stages, as a London expert whom I called in to confirm the nature of the disease can testify, and I should not be afraid of showing my apiary or methods to any inspector under the coming legislation.

Ants in Hives.—Down here I can assure Mr. Crawshaw (page 481) ants are a nuisance. Only the ant-proof legs he makes fun of, and doses of paraffin distributed round the hives keep the place clear. Without these precautions I find them



FRANCO-BRITISH EXHIBITION CONFERENCE: A FEW OF THE VISITORS AT THE "'W.B.C.' APIARY."

Mr. T. W. Cowan, Rev. — (of British Columbia), (the late) Mr. W. Broughton Carr, Mr. W. F. Reid, Monsieur Sevalle, Mr. W. Herrod.

everywhere, especially in the supers. If the bees see them they "go" for them, and it is a curious sight to see a guard literally jump upon an ant and turn him out, generally nearly bitten in two. Earwigs are equally numerous, but I never find them except in the quilts, and Keating's Powder or naphthaline balls among the wrappings keep them off. Ants are also troublesome when I am feeding. I find powdered naphthaline keeps them out, but in summer it evaporates so fast that I am afraid that, given in sufficient doses, the fumes might injure the bees, as there is "Formaleura" or "Apicure" already in each hive. Hence the ant-proof legs, the cups filled with paraffin. When I drop syrup on the ground whilst feeding, I usually pour some paraffin from the bottle kept under each hive on to the stuff spilt and tread the mixture into the ground. No bee goes there then.—W. E. ZEHETMAYR, Twickenham.

"ISLE OF WIGHT DISEASE," ETC.

[8008.] This disease has again given us a severe shaking in this neighbourhood. Of twenty-one colonies in and near this village alive and well during spring and summer, thirteen and their swarms are dead, one is sick, and the other seven I have no tidings of. A few imported ones are alive, others are dead. The two colonies' swarms sulphur-treated in June (see B.B.J., page 348) were healthy till October was well in, and then there was a break-out of disease all around, caused mainly, I believe, by bees having access to the contents of one or more of forty odd hives the inmates of which died of disease last year. These hives were kept closed during spring and summer; but one or more were evidently opened early in October, and for some days bees were flying to and from them in all directions. One especially strong stock, which a few days previously I had taken super honey from, leaving about 10 lb. in brood-nest, filled up its ten frames solid in two days, and then the flight-board and front of the hive were seen to be crowded with bees which about a fortnight later began to drop. As this colony had an uncertain queen—mid-September hatched—it was allowed to go for a few days. One stock in the same apiary was sulphur-treated several times, as was one other in another apiary. About the third week in October I noticed eggs in first-mentioned stock, so it was sulphur-treated several times at intervals of a few days, the last time being just as young bees were beginning to hatch out of three frames. A few hundred old bees only were now left alive in it. All three colonies are now alive and apparently healthy, and were flying rather freely yesterday (December 11). I do not blame the stolen honey for the break-out of disease, for I have almost come to the conclusion that honey alone does not infect at any time. I wrote early in the season of a skep stock which had done marvellously well on nothing but honey robbed from stocks dead of disease. Bees in this instance robbed from the top of the combs, the entrances of the hives being tightly closed. I have two nuclei wintering on honey from stocks which died of disease last year. I gave them a comb or two each to clear out, first washing them as they were very foul. Another nucleus is mainly stored with honey stolen from a skep near by, the bees of which died of disease at the end of October last. Bees of this skep died outside the hive. The three nuclei are headed by mid-September hatched queens, and have all reared and hatched young bees on this robbed honey, and all are to-day apparently healthy. I could give other instances. I therefore am compelled to abandon the honey-infection theory, and feel pretty sure that bees, and bees only, pass on the disease, or bees and débris mixed up on floorboards, and in some cases piled up or lodged between the combs.

Mr. Yetts (page 295) no doubt cleared his combs of dead bees and cleaned out the hives before putting new bees into them. Clean combs here from stocks dead of disease have had swarms on them which remained healthy and did well until this last break-out. Other swarms which went into hives where combs and floorboards had not been touched, but left with the dead bees upon them, became diseased. If my reasoning is correct, then it leads us to the link that connects the breaking-out of disease in swarms with its cause. It is pretty well understood that when a swarm comes off, if it is not hived in reasonable time it will be on the wing again and off to some place scouts have found suitable Sometimes a swarm will fly right away to such a place without settling, this showing that scouting had taken place before swarming. My idea is, and has been for a long time, that every swarm before leaving the parent hive has been scouting the neighbourhood for a place to go to; and I go further, and say that almost as soon as preparations for swarming are being made—*i.e.*, queen-cells started—this scouting begins. I have seen time after time empty hives taken possession of by scouts for days before swarming; sometimes a few only, at others a hundred or two. Some twenty years ago I first noticed this, and in that case the scouts held possession during the day for nearly a fortnight, and then the swarm did not come. The scouts on taking possession at once set to and thoroughly clean

out the combs and place they are in. Now, I think this is how the disease comes to break out in a swarm some time after hiving, and later on in the parent stock—first in the swarm because it contains scouting bees which have been in contact with dead bees, &c., in their expeditions before swarming, and later on in the parent stock through its germinating in the scouts some days before becoming infectious and passable to the younger bees which are left behind in parent stock. My idea as to every stock scouting before swarming may seem a "tall order," but I have seen so much of it that I am sure I am not a long way off the mark. It has been said and written that this disease breaks out in colonies which have not swarmed. How is it known that such a colony has not been preparing to swarm, and been prevented from so doing by unfavourable weather, or by more room being given, &c., or perhaps it may have been robbing a diseased lot? I may be wrong in this theory, but, on the other hand, there may be something in it. Anyway, if we can only find out where the enemy hails from we shall be better able to fight it. I might state that I have good reason for believing that the forty odd hives I mention above had not been cleared of dead bees when robbing commenced.

"T. A. P." (page 428) is rather amusing in his remarks as to my want of knowledge, &c. I have been a successful bee-keeper for a considerable time (over a quarter of a century), and I think I may say that I have had more practical experience than most men of the interior of a hive, brood-rearing, and bee-diseases. I think I was erring on the cautious side in over-dosing with sulphur, for I was out to "kill or cure." My main object was to prevent the spread of the disease to the other colonies near, which were not mine. The swarm first treated *was* mine, and was within a few yards of three stocks belonging to the owner of the garden. No disease had been there before. If I had given only a mild dose, and the disease had spread to the three stocks, what would the owner have said? I believe the sulphur does not cure any bee of the disease, nor do I think it kills them, but it seems to have the effect of making the healthy ones disease-proof, for the time being at any rate. The disease does not affect the brood, and it certainly does not stop breeding ("T. A. P.," page 428), for brood is always there in a diseased colony in the brood-rearing season if a good queen is there. *If* the colonies come out right on their first spring flight, I shall have no fear of them for some time afterwards. —A. Simpson, Chalfont St. Giles, Bucks.

HOW BEES CLEAN THEIR ANTENNÆ.

[8009.] In connection with recent correspondence on the subject of the use of the curry-comb in cleaning the antennæ, I should like to record an observation I made only about a week ago. Being a very mild day, I availed myself of the opportunity to feed my bees. They seemed to resent the interference, and a few—say about thirty—came into the glass-covered porch (my adaptation of the "claustral" principle) on a tour of inspection. During the twenty minutes I was watching them I saw different bees clean their antennæ in both ways as described by "D. M. M." and Mr. J. Herrod: and, as if they had been reading the B.B.J., and wished to assert most definitely that they are living organisms and not merely machines, one bee set to work to clean the antennæ of another bee. I was observing most carefully on account of the controversy, or I would not submit this for the perusal of such authorities as those quoted.—Timsicus, Bisley.

Queries and Replies.

[4066.] *Securing Honey from Apple-blossom.*—I should like a little advice on how to secure the maximum amount of honey from the apple-blossom, which in this district affords our best honey-flow. The flow usually begins the last week in April, continuing through May. Last season I united two stocks in April, and the bees stored in super about 20 lb. of honey in May, but I think it ought to be possible to get a larger yield. The stock worked well till it swarmed in the middle of May; after that it did not work so well for a few days, and then the best of the apple-blossom was over. The swarm was returned after I had destroyed the queen-cells and given three frames of foundation in the centre of brood-nest. I thought the overhauling of the brood-nest in the middle of the honey-flow unsatisfactory, so next year I intend returning the swarm (if it comes off in May) without its queen and without disturbing the brood-nest. I find that if a stock is extra strong in April or May it has a terrible desire to swarm.

In the B.B.J. of December 1 it is stated that "bees work better when they have a laying queen," so returning a queenless swarm would probably mean about a fortnight's absence of eggs, and this one would like to avoid. Can you tell me if returning the swarm to an upper chamber with its queen would meet the case? The arrangement would be as follows, beginning with the top: (1) Box of six or eight empty combs, with swarm inserted; then

(2) queen-excluder; (3) super of ten frames (full size); (4) super of ten shallow frames; (5) queen-excluder; (6) brood-nest of eleven frames. After the honey-flow from the apple-blossom was over, or about three weeks after swarming, when the young queen ought to be laying in the brood-nest, I would destroy the queen in the top, leaving the brood to hatch. Two questions I should be glad of an answer to are as follows: 1. Can a young queen be depended on to hatch out and begin laying at the bottom of hive while the old queen is at the top? 2. Would the queen confined by excluder in the top have any unsettling effect on the working bees below?—E. J. W., Street, Som.

REPLY.—You will have to get your colony strong and crowded with bees by the third week in April, either by inducing breeding early or uniting, as you have done. Instead of the plan you propose we should place a shallow-frame super on brood-chamber, and prevent the bees from swarming by giving the queen more room for breeding purposes. This can be accomplished by putting a hive with frames of comb-foundation below the body-box, so that the queen will have plenty of room for laying, which will check the desire to swarm, and work would be continued in the super. An additional super can be given if necessary. Should the bees swarm before you give the additional hive, and while working in the super, remove all the combs containing brood from the parent hive, and fill it with frames of comb-foundation, return the swarm, and work in the supers will go on with scarcely any interruption. In this way you have the laying queen with the bees, and there is no stoppage of the breeding. The combs containing brood can be given to other hives. 1. It is quite possible that a queen may hatch and begin laying while the old queen is shut off in the hive at the top, but this cannot always be depended upon. 2. No; bees would work just the same so long as the queen was with them.

[4067.] *Colour of Clover-honey.* — I shall be glad of your valuable advice on the following subjects: 1. What causes the difference in the colour of clover honey? This is very marked in the samples that I sent you last week. The No. 2 sample was like amber. I bought this honey from a tradesman whom I supplied with some of mine. He told me that his customers preferred this amber colour, and it fetched the best price. The clover honey that I get here is a pale straw colour in a good season, and is chiefly from alsike. Does the variety of clover cause the change in colour or is it the result of locality? The honey which usually takes first prize at the shows is, I notice, very light in colour. 2. Which do you consider yields the best honey, light soils or heavy clay ground? I have the option of either, but if you will be kind enough to let me know from what source the amber-coloured honey can be procured I might put a few stocks where it could be got. I hope I have not trespassed unduly on your time with my long epistle. I do not know what some of us bee-keepers would do without the B.B.J. to help us out of our difficulties.—C. W., Hale.

REPLY.—Clover grown on a clay soil yields the lightest and thickest honey; that on light soil will yield honey of a darker shade, but it will not be so thick. A good amber-coloured honey is obtained from sainfoin. Thanks for your appreciation. We are only too pleased to be of service to bee-keepers, and one of the best ways of helping is by answering the questions of those in difficulties.

Notices to Correspondents.

F. V. W. (Corse).—*Using Thermometer in Candy-making.*—1. Yes; an amateur can obtain uniform results with a sugar-boiler's thermometer if he is careful to remove the vessel from the fire when the desired temperature has been reached. 2. E. Skuse, Ltd., Ashmore Works, Harrow Road, London, W., price 7s. 6d. 3. At 235 deg. Fahr., and should not exceed 240 deg. in any case.

E. DE B. S. (Coventry).—*Bees Flying in December.*—1. It is quite usual for bees to take cleansing flights on fine days right through the winter, and it has nothing to do with the food-supply. 2. It will be advisable to give them a cake of soft candy.

T. PRITCHARD (Salop).—*Honey Sample.*—The honey is a very good sample; there is no disagreeable flavour about it. The source is mainly white clover, with a little dandelion. Eucalyptus flavour is peculiar to Australian honey, as stated in B.B.J.; we have never mentioned it in connection with that from New Zealand, where, we believe, no gum trees are grown.

Suspected Disease.

H. H. B. (Reading) and ASSOCIATE (Kent).—We regret to say that the bees are suffering from "Isle of Wight disease." As no remedy has yet been discovered, it will be best to destroy the bees and burn combs, quilts, and all internal fittings of the hives, which must then be disinfected by scorching well inside with a painter's blow-lamp.

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE-JOURNALS.

By "Nemo."

Over-production of Honey.—There is a very sensible article on this question in the *Petit Journal d'Agriculture*, in which it is stated that the first thing to be done to encourage the consumption of honey is to set the example. There are bee-keepers at whose houses you will find nearly all the most dainty comestibles with the exception of honey. One knows that they produce it, but as it is never seen on their tables one imagines that it is not for eating, and the idea does not occur to purchase it. Is not this a great mistake? M. Gubler, who calls attention to this article in the *Bulletin de la Société Romande d'Apiculture*, says: "Go into the school, and if you ask which of the children eat honey you will be astonished at the small number. Yet he had recently read that in some of the Alpine valleys, where flow both milk and honey, they have the habit of putting brandy in the children's coffee instead of milk, and it appears that there they give the milk to calves, and allow the honey to be lost by the hundredweight in the flowers of the pasturage." M. Gubler advises bee-keepers to set the example of eating honey, and of securing the co-operation of their wives and daughters by making them also interested in bee-keeping. They will know how to use honey and make the children benefit by this heaven-given food, and a stronger and healthier generation will in due time bless them. M. Gubler's desire is that every child should have at least a spoonful of honey for its breakfast.

Honey from a Scientific Point of View.—In an article under this heading Dr. P. Demade, in the *Jardin de la Santé*, reviews the different sugars, which he classifies according to their progressive merits. (1) Saccharin, which is of the lowest value; then (2) saccharose (cane and beet sugar) comes next, and (3) the natural glucoses (dextrose, levulose, and honey). He shows that saccharin has no nutritive value whatever; that saccharose imposes severe work on the organism, and does not suit persons whose digestive organs are not in good condition; that the natural sugars are directly and at once assimilated; that honey has the highest value of all the sugars, and that there is nothing superior to it. He says ancient wisdom, represented by Solomon and Hippocrates, has recommended it for the use of all men, and in the Bible we find it said, "My son, eat thou honey, because it is good." The father of medicine also by his own experience, supported by that of Pythagoras and Democritus, declares that the habitual use of honey conduces to extreme longevity. Also modern wisdom, and, if preferred, science too, from observation and experience obtained by new light shed on the subject, consider honey as the best of sugars. Honey, says Dr. Demade, is a producer of energy. When we take it we are able to exert more force, which manifests itself by a greater aptitude for physical or muscular labour. Accurate experiments have demonstrated this increased development of energy.

The late E. Preuss.—The German papers announce the death in Potsdam, near Berlin, of this well-known bee-keeper as the result of an apoplectic stroke. Emil Preuss was the originator of the method of bee-keeping which goes by his name. In 1899 he published "Meine Betriebsweise und ihre Erfolge," which caused a good deal of discussion amongst bee-keepers. Dzierzon said of this work: "The author (M. Preuss) is without question not only a clever theorist, but thoroughly practical. This work, really a classic, leads us into new roads without deviating from the true principles. The new method is based on both science and experience. It is the result of thought and the persevering observations of a learned man." M. Preuss used two-storied hives of the German-Austrian pattern, except that the frames in both stories were of the same size, so that the brood and honey chambers were of equal size. Before the swarming he transferred the bees from the brood-chamber to the empty hive above, leaving the queen below and filling out the space with built-out combs. Excluder-zinc prevented the queen from going up. Thus strong colonies were formed in the spring by preventing bees from leaving their hives unnecessarily, also preventing swarming, and in consequence securing a greater yield of honey even in unfavourable seasons and in poor districts. In this way he was able for five consecutive years to obtain a yearly average of 1,370 lb. of honey from thirty-three hives. M. Preuss was the first to advocate "claustration," and for this purpose had a large vestibule 6 in. by 8 in. deep fitted to the front of his hives, provided with perforated zinc for ventilation. This, however, did not keep the bees in perfect darkness, and several improvements have been made since with a view to obtaining the obscurity necessary to keep the bees quiet. The number of bee-keepers practising the method of M. Preuss induced him in the year 1900 to start a new journal, entitled *Mittheilungen über die Preuss'sche Bienenzuchtbetriebsweise*, the object of

which was to advocate the new methods. The Government also took up the matter, and made a grant of 625 marks to start an educational apiary at Rehbrücke where this method could be taught. Forester M. Bohm was put in charge of the apiary, and gave courses of instruction which were attended by foresters, for each of whom the administration made a grant of 20 marks. In 1900 a second edition of M. Preuss's work appeared, and this was translated into French by the Abbé E. Eck. As his methods are extensively adopted, the services M. Preuss has rendered to practical apiculture are not likely to be soon forgotten.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE "WELLS" SYSTEM.

[8010.] There have appeared in your pages of late several editorial notes and other articles advising bee-keepers not to try the "Wells" system, but I feel that, having given it at least five years' trial with perfect success, I can strongly recommend it.

Should anyone wish to try it, I should advise him not to experiment with foul-broody stocks or non-bee-proof division-board (see 7972, page 464).

I have always obtained considerably more surplus (I never take any from brood-chamber), sometimes more than double, than from any other two separate stocks. I have never had a swarm issue, nor has one side become queenless; nor have I had a stock die. If in the spring one side of the division-board appears rather weaker in bees than the other (although generally they are nearly equal), I take a frame of hatching brood from the stronger and insert it in the middle of the weaker brood-nest, and if necessary repeat the operation again until both sides appear equally strong. They are generally ready for supering about the last week in April. Each super has a bee-way (about the size of entrance) cut out on one side (the piece of wood removed is kept to replace when necessary), and it is placed against the corresponding opening in another super. In using the super-clearer it seems immaterial which side the bees go down.

Wishing yourself and all bee-keepers a most prosperous and bountiful New (honey) Year.—W. G. FISCHER WEBB, South Croydon.

SKEPS FOR DRIVING.

[8011.] No one need be at a loss for one of these when preparing for an examination. Cut as many tough combs from frames as may be required, and shape to fit fairly well inside of skep. Sharply point five or six sticks about ¼ in. thick, and push through the combs and the skep. Slip in between the combs near each end bits of wood ½ in. thick; these should run from bottom to top of combs. Those between outside combs and skep side cut the requisite thickness to wedge up all combs rather tightly. Take the bits of wood out two days after the bees are put on the combs. If for driving only, the skep may be prepared a few days beforehand; but if for driving competition where brood has to be present, then it should be prepared a fortnight before at least. I have made them after this fashion, and find they are ideal skeps for the purpose.—A. SIMPSON, Chalfont St. Giles.

BEE-KEEPING AND THE KENT C.C.

[8012.] I am unable to supply your correspondent (page 466) with the information as to the average attendance at the classes throughout the county of Kent for one year; to do so one must have attended at the different centres where the lectures were given, unless the particulars could be obtained in some other way. I was a student at one of the centres in 1907, and, speaking from memory, should say the number present was generally about twenty.

We are told (page 466), "There are a few who attend year after year simply to qualify for prize-money." As the rules of the committee allow anyone who has put in the proper attendance to exhibit at the annual show in the same and two following years (this applies also to the poultry department), is it likely that there is anyone trotting up and down to different centres in the county during the summer months year after year simply to qualify for prize-money?

The names of the exhibitors at the last three shows are asked for. I cannot send for 1908, but do so for 1909 and 1910 [We regret our limited space prevents our publishing these.—ED.], when the judge was Mr. F. B. White.—E. R. NASH, Smarden, Kent.

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

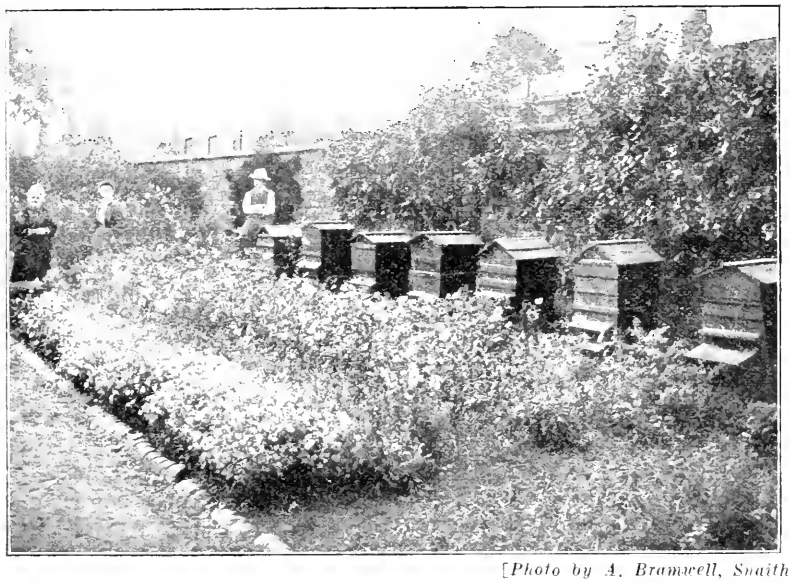
The "summery" aspect of the apiary we illustrate below forms a pleasing contrast to the dreary appearance presented by our bee-gardens at this season. It also reminds us that we have now come almost to the threshold of the New Year, which we hope will be a successful and plentiful one for the bees and their owners. Mr. Smith is a young bee-keeper whose lines have evidently "fallen in pleasant places," and his cheery and optimistic account of his bee-experiences, though apparently somewhat uneventful, is a welcome contribution to our "Homes of the Honey-Bee." He says:

"It is many years since I left the old farmstead where in the bee-shed there stood a picturesque row of some ten straw skeps, their happy inmates having things pretty much their own sweet way. When autumn arrived one or two of the heaviest were selected and a sulphur-pit prepared, over which the skep was placed and the bees smothered. How glad we feel that those cruel bee-days are past, when our industrious little friends were put to death in return for a summer's hard toil.

"Not until a few years ago was my interest in the craft reawakened, when a friendly apiarist persuaded me to invest in a stock of bees, and he spared no pains to initiate me into all the mysteries of the movable-comb hive. I forthwith provided myself with that bee-keeper's vademecum the 'British Bee-keepers' Guide Book,' and from that time forward I have gradually established my small apiary. The situation, as will be observed from the photograph, is a cosy one, sheltered from north winds by a high wall, thus enabling me to have the hives facing full south with a clear sweep out into the fields for the bees in their flight.

"Up to the present great 'takes' of surplus have not been the order of the day with me, as this district is not one of the best for bee-forage. But hope springs ever in the bee-keeper's breast, for indeed I am already looking forward to an ideal summer in 1911. In spring I placed a skep of bees over a ten-frame body-box, and they worked themselves down, leaving plenty of very good honey in their old home, which I have bottled, and fed them well up with syrup by way of compensation for what they have given me. Instead of ordinary zinc or wire excluders I have used the honey-board on two or three hives, and found it gives the bees free access to the surplus-chambers, and the chances of the queen going up are very small. I wonder what success others have had with the 'Rymer' honey-board?

"As to financial results, I cannot truthfully say my bees have repaid me for the capital outlay, except it be in the shape of the pure enjoyment derived from cultivating this ideal hobby, which I find more absorbing and interesting as time goes on. And let me here say the *esprit de corps* I have found existing amongst bee-keepers has aroused my admiration—timely advice and willing help rendered by sympathetic neighbouring bee-keepers go a long way towards making this section of one's life happy."



[*Photo by A. Bramwell, Snaith.*

MR. T. SMITH'S APIARY, SNAITH, YORKS.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

The National Convention.—This gathering was held at Albany, New York State, and the number of delegates in attendance was about 250—"the largest meeting the Association ever had." One delegate declared that as a business bee-keeping enabled him to make a living "without any trouble"; another "made $1,000 from 140 colonies." Texas was considered the "most successful State" for the purpose. Mr. Byer claimed that for working strong colonies successfully "supers should be tiered up four or five high." Some suggestions by President York were: "One good, energetic man should be employed to give his whole time to organising bee-keepers." They should have a good lecturer "always on the road." They should have a smaller and more workable Board of Directors. At every State meeting there should be a member of the National present. The honey markets should be regulated—"At present some are overloaded, while others are short." All his recommendations were favourably received, and it was determined "to take immediate measures to carry them out." Mr. House read a paper on "Comb Honey," wherein he said strong colonies, good appliances, and contentment of bees are necessary to success. Mr. Howe, treating of "Selection," advised: "Drop the question of beauty, and breed for honey-gathering qualities only." Mr. F. Root pleaded for "Advertising Honey," by which the "output could be increased sixfold." The foregoing is gleaned from *Gleanings*.

Disinfecting Hives.—I have strenuously advocated this practice in cases of foul brood. The *Canadian Bee Journal* has throughout taken up an antagonistic attitude, but lately, apparently hard up for argument, falls back on a nameless New Zealander, who not only considers—as he is quite entitled to do if he likes—the practice "unnecessary and superfluous," but also boldly asserts that "it is almost unheard of in New Zealand"—a thing, as it is not consistent with fact, which is not permissible. Against the authority of this Mr. Anon, who either does not know his own name or is ashamed to divulge it, I would pit the authority of his own Government, and especially the Department of Agriculture, which has apiculture directly under its supervision. I quote from an official document issued under the direction of the Prime Minister of the Dominion. On page 53 I read: "The hive, bottom and roof, should be cleaned and *thoroughly disinfected*." Again: "Be sure to *disinfect* everything used during the operations." And yet again: "*Disinfect* the hands, knives, &c., after handling an infected colony." These instructions are precise, emphatic, and, moreover, authoritative.

More drastic measures are advised in virulent cases: (1) "Destroy everything by fire." (2) "The combs had better be burned right away and the ashes buried." (3) "Singeing by fire" is given as an alternative to disinfecting. (4) "Dig the ground around the diseased hive." Here is the gist of all my arguments (page 52): "The McEvoy treatment is an effective cure, *when properly carried out*." That includes *disinfection*.

Exit 1910!—One of the most pleasant and interesting duties I undertake in the field of bee literature is the monthly contribution of extracts from the pages of American and Colonial bee-newspapers. The perusal of most of these papers is a special pleasure, and my only regret is that the exigencies of space prevent me from making much more copious extracts. They will be continued during the coming year on the old lines, and I hope I will be able to present a good many tit-bits. American bee-keeping during the present year has been in a very flourishing condition, and although the harvest ranged only from fair to fairly good, prices have been paying ones. Bee-literature is in a very healthy state. Another edition of "A B C and X Y Z" has been issued, and is selling splendidly. Mr. Hutchinson's "Advanced Bee-Culture" has also gone into a second edition, and the books by Doolittle, Dr. Miller, and Townsend are clearing out rapidly. Manufacturers have had an excellent season, and are still kept busy.

Another year has almost winged its flight, and vol. xxxviii. is now completed. I should wish my last words in it to be those of peace and goodwill to all bee men and women on both sides of the Atlantic. A happy and very prosperous New Year to one and all!

Notices to Correspondents.

W. H. Z. (Twickenham).—*Procuring Foreign Publications.*—The works reviewed on page 483 of B.B.J. can be procured by sending direct to the publishers whose names and addresses are given an international money-order for cost and postage. We can procure any foreign books required, but postage and cost of money-order must be added to the prices.

Honey Samples.

P. G. (Glamorgans.).—The honey appears to be foreign, and is of inferior quality. It now shows signs of granulation.

G. H. (Hants).—Sample is a poor quality honey, and we should say it is wholly or partly of foreign origin. It is not worth more than 25s. a cwt. in bulk.