BULLETIN

VOL 1 Baltimore NO 1

TO THE MEMBERS OF THE SOCIETY:

Beginning with this issue all members of the Society will receive this bulletin bimonthly. It will be issued in the months of January, March, May, July, September and November.

The object is to keep our members informed of the work, activities, interest manifest and the progress of the Society.

Owing to the size of the bulletin, all matter will be more or less condensed, as our staff is small, and consequently the work must be kept down to a minimum.

The Editor.

FIRST BIRTHDAY

March twenty-fifth the Society completed its first year. The Annual Meeging was held on March twenty-third and was commemorated by a supper. The President made an address on organized work done in Natural History in the State of Maryland during

the past century. He made comparisons with the work of successful institutions outside of this state and pointed out that the greatest contribution to their success was their form of organization.

The Assistant Secretary announced the results of the annual election for Trustees. Mr. Sidney Garman was elected to fill a vacancy. Dr. Frank Valentine and Mr. Lewellyn Jones were elected for terms of three years each.

The annual financial report for 1929-30 and the budget for 1930-31 were read by the Treasurer.

A series of enlarged photographs demonstrating various phases of field work were exhibited by Mr. Edmund B. Fladung.

GEOLOGY

On March sixteenth the Department of Geology went to Summit Bridge, Delaware to study and collect Cretaceous fossils. Three machines and six men made up the working force. A large number of specimens were collected and many photographs were taken.

On April sixth a similar trip was made to Brightseat and Seat Pleasant, Maryland, for the same purpose. Owing to heavy rain the results from a point of collecting were nil.

HERPETOLOGY

The article on the Rhinoceros Iguana of Haiti published by Mr. Gilbert C. Kilngel from his recent trip to the island, in the Natural History of the American Museum of Natural History of New York in the September-October number, was re-published in the Illustrated London News, March issue.

LECTURE

Mr. W.W.Coleman delivered a very interesting

lecture on color photography in relation to Natural History. Mr. Coleman demonstrated the whole process, from the photographing of a marine shell, Spondylus pictorum, to the finished colored plate.

PUBLICATION

Our publication, "Familiar Moths of Maryland" has been received from the printer, but owing to errors it had to be returned. As soon as we receive it again, all members will be mailed a copy.

The Society is now engaged in the preparation of a publication on the lizards of Maryland.

ELECTION OF OFFICERS

At the Trustees' Meeting of April eighteenth, the following officers were elected for the fiscal year 1930-31;

President. . . . . .Edmund B. Fladung
Vice-President. . . . . Gilbert S.Klingel
Secretary. . . . . .F.Stansbury Haydon
Ass't Secreatry. . . . .A.Lewellyn Jones
Treasurer. . . . . .Edmund B. Fladung

LIBRARY

The work of building up our library is now in process under the direction of the Librarian, Mr. Sidney L. Garman. A system of cross indexing is being employed to assist our staff and members in their work.

The following have been received during the months of March and April;

"The Thoracic Mechanism of the Grasshopper and Its Antecedents" U.S.N.M.
"The Formanifera Of The Atlantic Ocean" U.S.N.M.

"Ordovician Trilobites of the Family Teleph idae, and Concerned Srtatigraphic Correlations" U.S.N.M.
"Composition and Structure of Meteorites" U.S.N.M.
"The Lyssianassia Amphipoa Crustaceans of Newfoundland, Nova Scotia, and New Brunswick in the U.S.N.M." U.S.N.M.
"Contributions to the Taxonomy of Asiatic Wasps of the Genus Tiphia(Scaliidae)"U.S.NM
"Fishes of the Families Amiidae, Chandidae, Duleridae, and Serranidae, Obtained by the U.S. Bureau of Fisheries Steamer "Albatross" in 1907 to 1910" U.S.N.M.
"The Past Climate of the North Polar Regions" U.S.N.M.
"Anearly Complete Shell of The Extinct Turtle Trachemys Sculpta." U.S.N.M.
"The Bryzoan Fauna of the Galapagos Islands" U.S.N.M.
"Synonimical and Descriptive Notes of Parasitic Hymenoptera" U.S.N.M.

FROM THE TREASURER

About 83 % of the budget fund has been subscribed. Members are requested to send in their pledges if possible, so that we can proceed with our program.

CONTRIBUTIONS

Thru the interest and generosity the following have been received:
From Mr. E.G. Wegner: Tophographical Maps of Alleghany, Frederick and Talbot Counties, Maryland. A Geological Map of Baltimore County, Md. A duplicating machine.
From Mr. Edward McColgan, a mounted specimen of a heron.
From Mr. W.W.Coleman, six rolls of lecture films on birds and mammals.

BULLETIN

Vol 1 Baltimore, July 1930 No. 2

HUNTING WITH THE CAMERA

The time will shortly come; in fact one can safely say, the time is here, when Naturalists and Hunters will exhibit their trophies in the form of photographs, instead of specimens, heads antlers and skins.

Through the scarcity of wild life, shooting will be minimized. Every year one notes the apparent scarcity of certain forms of animal life. This scarcity will cause the camera in a greater extent to supplant the rifle.

Hunting with the camera is not only a sport, but a science. The patience, skill and study in tracking, stalking and shooting with the camera requires more experience and technique than the use of the rifle. More over the results are more pleasing and lasting, for instead of a life-less mass, subject to decay of some sort or the other and always requiring attention, one has a live creature with poise, surrounded by its natural element.

Our Society advocates this some-what new and less destructive mode of hunting and so far

have acquired fifty-three enlarged nature photographic studies of birds, frogs, snakes, lizards, insects, etc. Besides we have many negatives not as yet enlarged.

We urge our members and friends of animal life to take up and encourage this delightful sport and by so doing they will not only add to the Societies faithful records of Maryland Natural History, but most of all, help to conserve the wild life of our State.

The Editor.

OUR SEMI-ANNUAL GUEST EVENING

The second Semi-Annual Guest Evening was on May 26th.

The feature of the evening was the showing of a five reel movie of "The Dragon Lizard of Komodo". This is the first time that this film was shown outside of the American Museum of Natural History, New York, to whom the film belongs and who extended this courtesy to our Society.

The film was made by Mr. Gordon L. Burden, Trustee and member of the staff of Herpetology of the American Museum of Natural History.

A new display of enlarged Nature photographs were exhibited by the following:- By Mr. Gilbert C. Klingel, turtle, Cistudo carolina; lizard, Liocephalus schreibersii; frog, Rana clamitans; toad, Bufo americanus; butterfly, Papilio turnus; chipping sparrow, nest and eggs of red winged black bird, and mourning dove: By Mr. Edmund B. Fladung, Anticline, Hancock Maryland; Oriskany Sandstone deposit, Sleepy Mountain, West Virginia; nest and eggs of mourning dove; and Osprey of Cypress Creek; By Edward McColgan, two views of Gwyns Falls, Baltimore Maryland: By Mr. Charles A. Pertsch, tree frog, Hyla versicolor; snapping turtle, Chelydra serpentina, moth, Samia cecropia;

bat, Lasciurus borealis; star fish, Asterocy turkey vulture; blue jay chick and chipping sparrow.

Some new minerals from Toledo Ohio, were exhibited by Mr. Stansbury Haydon, besides insects, minerals, fossils and Indian arrow-heads on display.

Tea was served in English fashion.

HERPETOLOGY

The Society was represented at the annual meeting of the American Herpetological and Ichiological Society, which met at the American Museum of Natural History, New York, May 19th and 20th, by Mr. Gilbert C. Klingel, Curator of Herpetology for our Society.

Mr. Klingel spoke on the Rhinoceras Iguana and showed his film of this creature made recently in Hatii.

SAILED

Mr. Edward McColgan sailed for Europe June 22nd. Mr. McColgan will see the Passion Play at Oberammergau, after which he will visit the Museums at Munich, Berlin, Stuttgart and South Kensington to secure data for the Society.

ENTOMOLOGY

This Department has a vast quantity of fine material which it is unable to display owing to a suitable cabinet to house its specimens.

We are promised a cabinet, which is included in this years budget. The Treasurer informs us that to date 92% of the budget

has been raised and 51% of that amount has been paid.

Our Members can help this Department by sending their pledges and making remittance as soon as possible so that this material can be properly preserved.

Only 8% is needed to complete budget.

HONORED

June 23rd the President presented Mr. F. Stansbury Haydon, Trustee and Secretary of the Society a book with an engrossed plate expressing the appreciation of his work for the Society and congratulating him upon receiving the degree of Bachelor of Laws from the University of Baltimore.

The engrossed plate was made by Mr. C. H. Waller and signed by all the members of the Society.

GEOLOGY

On June 1st a short trip was made to Bare Hills, Maryland, mostly to make photographs and study the deposits and caves. A number of specimens of serpentine and other minerals were collected.

The most successful trip of this Department was to Jones Warf, St. Mary's County, Maryland, June 28th and 29th. Two machines and five men comprised the working force. Many photographs of the deposits were secured and a large number of fine and unusual fossils were collected.

FAMILIAR MOTHS OF MARYLAND our new lwaflet has been mailed. If you did not receive a copy please notify the Secretary.

BULLETIN

Vol. 1 Baltimore, August, 1930. No. 3

TO OUR MEMBERS

In beginning this little bulletin it was our our intention to issue it every other month. Since then it is the opinion of the Trustees and Staff members that the bulletin should be issued every month.

We trust that we can issue it every month, but to do so we need the co-operation of every one; Trustees, Staff, and Members. Every one can help by sending to the Editor short articles on Natural History observations, travels, and experiences. The Editor reserves the right to cut, withhold, and publish any article at his discretion.

THE EDITOR.

THE HUMANES IN NATURAL HISTORY

Of the many phases of Natural History none are so apparent as the humanes of the subject.

With this we are more concerned than any of its other phases; in fact we consider it the most important, and after careful thought, this is what makes it Natural History.

This phase can be seen and appreciated only by careful study, extensive field work, and close observation, and it is only then that we see the side of Natural History that endears these dumb creatures to us.

This part of the work is rather extensive; in fact one could devote a whole life to this delightful subject and not master it. It is as though one were in a new world with entirely unrelated creatures, possessing certain human properties, some in a greater degree than others and reflecting them under conditions which are without doubt human.

When one sees the courtship of birds, their apparent skill in building their nests, protection of their young, watchfulness of their enemies, etc., one acquires a kindly feeling and sympathy for these little creatures which is human. What we observe in birds is found likewise in mammals, reptiles, fish and insects. All of them reflect or possess some human traits, and these human touches are what makes Natural History, not as some think, a collection of lifeless specimens and dry facts, but a subject of intense interest and human feeling.

THE AMERICAN MUSEUM OF NATURAL HISTORY
and
THE NATURAL HISTORY SOCIETY OF MARYLAND
West Indian Herpetological Expedition

Through the generosity of Mr. Gilbert C. Klingel, Trustee, Vice-President, and Curator of Herpetology of our Society, a joint expedition has been arranged with The American Museum of Natural History, of New York.

Mr. Klingel will personally conduct the expedition and for that purpose has had a vessel built which is an exact replica of the famous "Spray". Announcement of the expedition was published in the Journal of the American Museum

of Natural History for July and August. Reference has been made in the same journal of the recent trip by Mr. Klingel to Haiti, and an account on him at the annual meeting of the American Herpetological and Ichiological Society.

ANNUAL REPORT OF THE DEPARTMENT OF GEOLOGY

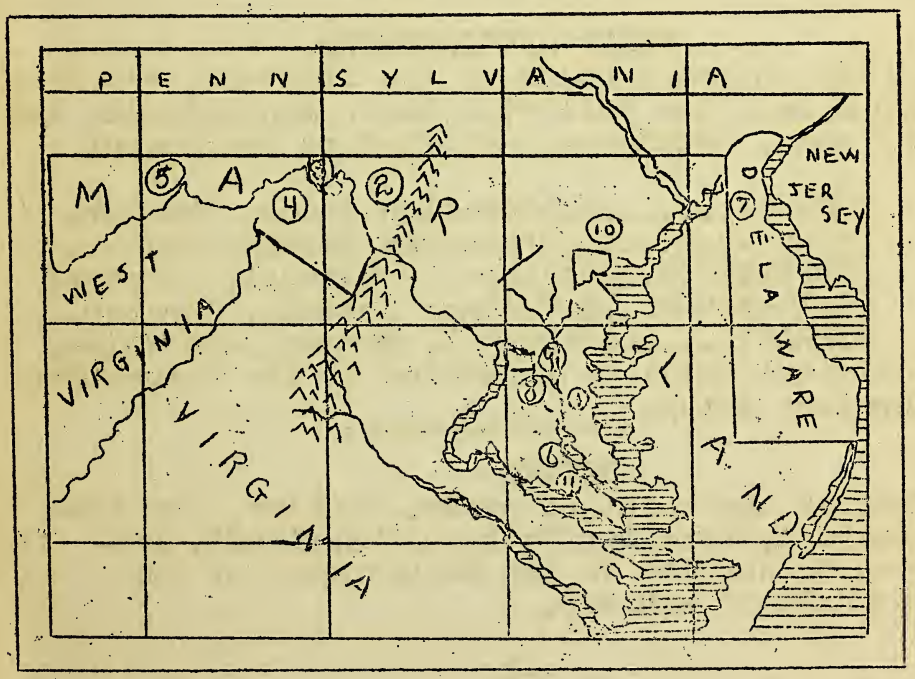
A. L. Jones, Curator.

It is the intention of this department to make, as far as possible, a complete survey and record of the Maryland and adjacent deposits.

So far eleven firld trips have been made on most of which specimens have been collected and photographs made.

The work of identifying, cataloguing and preparing specimens is now under way. The Miocene material, with the exception of the two Jones Wharf trips is now complete. Eighteen species were taken at the Plumb Point locality.

The map below will give some idea the area and places covered during the past year.



1. Plum Point, Miocene; 2. Conocheaque Creek, Ordovician; 3.Hancock, Devonian; 4.Berkley Springs, Silurian; 5. Frostburg, Carboniferous; 6.Johnes Wharf, Eocene; 7. Summit Bridge, Cretaceous; 10. Bare Hills, Serpentine and Chromite; 11. Jones Wharf, Miocene.

TRUSTEES' MEETING

The quarterly meeting of the Board of Trustees was held July 8th at the home of Mr. Stansbury Haydon, Trustee and Secretary. Mr. Haydon entertained the Trustees at dinner before the meeting.

MEETING NIGHT

The meeting or assembly night of the Society will be every Tuesday from 8 to 10:30 P.M.,except holidays. The change was made from Monday at the recent Board Meeting after careful consideration.

STAFF APPOINTMENTS

At the recent meeting of the Trustees, the President made the following Staff appointments for one year, which were ratified by the Board:

GEOLOGY.....A.Llewellyn Jones, Curator.
Entomology.....Stansbury Haydon,Curator.
HERPETOLOGY...Gilbert C. Klingel, Curator.
ORNITHOLOGY...W.Wallace Coleman, Curator.
LIBRARY.....Sidney L. Garman, Librarian.

Assistants will be appointed by the respective Curators later.

NOTICE

Through the courtesy of Dr. Wheeler, our publication,"Familiar Moths of Maryland", has been on display at the 28 branches of the Enoch Pratt Library.

BULLETIN

Vol.1 Baltimore, September, 1930 No.4

BIRD EGGS OF YESTERDAY

Of all the questions hurled at the ornithologist, none are so difficult to answer as those in reference to the eggs of birds. The confusion of ideas does not belong to the layman alone, for despite the many years of study and research that has been devoted to this phase of bird life, there exist innumerable answerless queries. Countless theories are advanced only to meet with so many contradictions as to demolish them completely. However, this lack of knowledge does not reduce the interest of the subject, but on the contrary, serves to increase its fascination.

Knowing that birds evolved from reptilian ancestors, we cannot help but wonder how, when, and where, the change in egg formation came about. It is bewildering to think that delicate walls of calcium whose fragility is so great that it has become proverbial, can claim any relationshipto the tough leathery eggs of reptiles. We cannot help but wonder what was the formation of eggs of the

first bird known to man, the Archoeopteryx, which is the prize of every Paloentologist and the pride of every theorist. Did this queer creature emerge from a tear in a leather sack, or did a wall of mineral matter fall asunder at the thrust of its horny tooth-lined bill ?

A grasping of the fourth demension which has characterized this generation has not lessened Man's respect for the more familiar three. When we compare an egg of our present day humming bird, so small that the nail of your smallest finger would cover it, with that giant of the past ages, the great Aepyornis of Madagascar, whose shell measures nine by thirteen inches, we can only excuse the inefficiency of our informants and encourage them to greater efforts.

W. W. Coleman,
Curator of Ornithology.

GEOLOGY

Summary of field trip to Solomon's Island, July 19, 1930 by Curator A. Llewellyn Jones.

A short trip was made to Solomon's Island and vicinity for the purpose of investigating the Miocene formations of this locality.

The area covered was confined to the low cliffs along the north side of the Patuxent River between Mill Creek and Drum Point Light, then north along the Chesapeake Bay about three quarters of a mile, a total distance of three miles.

No traces of fossils were found in either the river or the bay sections of the cliffs, however fossils were found in the presence of a fossil bearing stratum that dips below the tide level at this point.

A representative collection was made including a piece of hard red clay showing marks of Pectin madisonius, the Turritella plebia was found in large quantities, (two very good specimens were found) and fragments of Epchora, Polynices, pecten and Arca were noted though no good specimens were secured. The absence of teeth was also noted.

THE AMERICAN MUSEUM OF NATURAL HISTORY
AND
THE NATURAL HISTORY SOCIETY OF MARYLAND
West Indian Herpetological Expedition.

On August 20, 1930 the vessel for this expedition was brought to Baltimore from Oxford Maryland by Mr. Gilbert C. Klingel and Mr. Edward O. Wegner. This trip was uneventful with the exception that they were becalmed for sixteen hours.

The vessel, which is yawl rigged, was built by the firm of Alonzo Conley, Oxford Maryland, after the famous "Spray", of Captain Slocum, who circumnavigated the globe in his vessel. Mr. Klingel's ship the "Basilisk" is the third built after the origional "Spray"; the second also called the "Spray", was built for Major Culler of California.

The "Basilisk" has been moored at the foot of Pier 4, Pratt Street, where she is being fitted with photographic laboratory, galley, etc.

Members of the Society desiring to see the vessel are cordially invited. There is nearly always someone on board.

The "Basilisk" will leave for a short trip September 20th, returning October 7th.

FIELD TRIPS

On August 29th the President Mr. Fladung made a short trip to Frostburg, Maryland to look over the coal mine district and make photographs of the mountains of this locality. Owing to heavy mists hanging over the area, not many good photographs were secured.

Mr. Haydon, Secretary of the Society, while visiting in the Pocono Mountains of Eastern Pennsylvania, made notes on the wild life of this region, especially a colony of Beavers which had biult several dams and a colony house.

DR. NOBLE VISITS BALTIMORE

Dr. Kingsley Noble, Curator of Herpetology of the American Museum of Natural History was in Baltimore August 30 and 31. Dr. Noble came to see the "Basilisk" and talk over and make arrangements about equipment for the coming expedition.

Dr. Noble was very pleased with the work of the Society and promised his support to further the Society's efforts.

While in Baltimore, Dr. Noble was the guest of Mr. KLingel, VicePresident of the Society.

THE BALTIMORE MUNICIPAL JOURNAL

A two page write-up of the Society appeared in the Municipal Journal of August 22, 1930.

Members desiring a copy can secure same by writing to the Secretary.

The article was followed up by a condensed report in the Baltimore American.

CORRECTION

In the annual report of the Department of Geology in the August issue, trip No 8, Seat Pleasant, Cretaceous, and No 9, Bright Seat, Cretaceous, was ommitted.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. 1 Baltimore, October 1930 No 5

MARYLAND'S WEALTH OF FINE PAPILIOS

Among nearly all lepidopterists one finds the longing to visit the tropics for the purpose of collecting specimens. It is indeed a most natural desire, for the moth and butterfly collector is bound to be a lover of beauty, and there is no denying the splendor of most of the forms of Lepidoptera which abound the tropic regions. It has often been conceded by naturalists that with the possible exceptions of the metallic Morphos of South and Central America and the gigantic Ornithopteras of the East Indies, there is no genus of butterflies more splendid than the Papilios, or "Swallowtails". The genus is immense and is distributed in nearly every locality known to the butterfly collector. Here, in Maryland, we are extremely fortunate in having six representative species, all of large size and gorgeous coloring. In this fact our good fortune is greater than the average person realizes, and it is more manifest by the fact that the entire continent of Europe proper boasts

but two. The two European forms, Machaon and Podalirius, are dwarfed in contrast to the large handsome species common to Maryland. When considering the rich greens and black of our native Troilus, the gorgeous metallic reflections and lustre of Philenor, the showy black and white and fantastic tails of Ajax, and the immense size and beauty of Cresphontes and Turnus, one should feel grateful that all these fine creatures are native to and in every case but Cresphontes, common in our state. It is a shame that in so many cases, the lepidopterist, in looking only toward the dazzling creatures of the far away tropics, forgets the fine things that are at his very feet. Maryland's vast wealth of butterfly life, and particularly the fine Papilios should be far more appreciated by our local naturalists.

Stansbury Haydon
Curator
Dept. of Insect Life

THE AMERICAN MUSEUM OF NATURAL HISTORY
AND
THE NATURAL HISTORY SOCIETY OF MARYLAND
West Indian Herpetological Expedition.

A short trip was made by the BASILISK from September 20th to October 7th 1930.

The trip took in the various tributaries of the Chesapeak Bay and the Atlantic around Cap Henry.

Various experiments and manoeuvers were conducted, with the vessel preparatory to the final sailings. The whole experiment was exceptionally successful. All conditions of weather were experienced. There was a storm for two days during the trip and winds of various directions were encountered.

Mr Gilbert C. Klingel conductor of the

expedition conducted the experiment, assisted by Mr. Alvin D. Zachary.

Many Photographs were taken and a number of sharks were seen, one of these was harpooned, which had followed the vessel for several hours.

ANNUAL REPORT OF THE DEPARTMENT OF ORNITHOLOGY

W. Wallace Coleman, Curator

While the work which has been accomplished is not as imposing as some of that of other departments, nevertheless we have secured some valuable information and records for the Society.

The present purpose of this department is to collect authentic information and photographs rater than skins or mounted specimens. However such specimens as we receive will be prepared. A specimen of American Woodcock (Philohela minor) which had been killed by an automobile was the only skin collected.

A total of twenty-three birds were studied and photographed. The various families being represented as follows :

Laridae	one	Strigidae	one
Ardeidae	one	Alcedinidae	one
Scolopacidae	one	Tyrannidae	two
Phalaropodidae	one	Corvidae	one
Columbidae	one	Icteridae	four
Cathartidae	one	Hirundinidae	one
Buteonidae	three	Mimidae	two
Pandionidae	one	Picidae	one

Another important phase of the work being carried on is the collecting of dates on the arrival and dissapearance of such migratory species which are either transient or season residents. This is being carried on under the guidance of The United States

Biological Survey. Only the lack of proper equipment will prevent these investigations from being carried forward on a greater scale.

The following species were photographed from life by means of blinds, stalking, etc. by Messrs G. C. Klingel, Alvin D. Zachary, and E. B. Fladung and Charles A. Pertsch :

American Herring Gull, Larus argentatus smithsonianus; Green Heron, Buterides virescens, Mourning Dove, Zenaidura macroura, Turkey Vulture, Cathartes aura, Cooper's Hawk, Accipiter cooperi; American Osprey, Pandion haliaetus carolinensis; Belted Kingfisher, Ceryle alcyon; Flicker, Colaptes auratus, Kingbird, Tyrannus tyrannus, Least Flycatcher, Epidonax minimus, Red-winged Blackbird, Agelaius phoeniceus; Meadowlark, Sturnella magna, Chipping Sparrow, Spizella socialis, Towhee, Pipilo erythropthalmus; Catbird, Galeoscoptes carolinensis, Brown Thrasher, Harporhynchus rufus, Saw-whet Owl, Cryptoglaux acadica.

An important contribution to the Society was a collection of oilpaintings made by Mr. Gilbert C. Klingel and framed by Mr. E. B. Fladung, they were ; Red Shoulder Hawk, Blue Jay, Wilsons Phalarope, Sparrow Hawk, Jamaican King Fisher.

One illustrated lecture was delivered to the Society by the Curator on the subject of bird migration.

MR. HASSLER VISITS BALTIMORE

Mr. William G. Hassler of the Department of Herpetology, American Museum of Natural History, while in Baltimore on Sept. 6. & 7. to make final arrangements for the coming expedition, was the guest of Mr. Klingel, Vice-president of the Society and leader of the expedition.

BULLETIN

Vol. 1 Baltimore November & December 1930 No 6

TO OUR MEMBERS

The Editor and Staff offers an apology to our members for the delay of the Bulletin.

The work entailed to our limited Staff, the changing of some of our plans which was found necessary and the holiday seasons were the chief cause of delay.

We trust to be more regular in the future.

The co-operation of every member is solicited. We have requested articles from our members on nature, travel etc., but so far have received very few responses.

Please send in your article to the Secretary.

THE EDITOR

OUR SEMI-ANNUAL GUEST EVENING

The third Semi-Annual Guest Evening was held Friday October 24th, 1930.

One of the features of the evening was two motion pictures loaned the Society by

the American Museum of Natural History, New York. The one picture featured moose, muskrat, deer, wild goats and birds thru Northern Canada. The second reel was birds of Bonaventure. This was entirely a bird picture, featuring water-fowl.

As a request Mr. Klingel's reel of the Rhinoceros Iguana of Haiti was shown.

A most beautiful display of butterflies was exhibited by Mr. Stansbury Haydon, Curator of Entomology, as a special loan collection. The butterflies exhibited were of the family of Papilios from Asia, India, Japan, Ceylon, Philipino Islands, South America, Europe, West Africa and the Dutch East Indies.

The display also consisted of a collection of exceptional fine Ornithoptera from New Guinea and a collection of Morpho from South America.

A new exhibition of enlarged photographs were exhibited by the following: Mr. W.W.Coleman, fungi, Morchella conica; Spring peeper, Hyla pickeringii; Mr. E. B. Fladung, Barred Owl, Chipping Sparrow, American Robin and Cardinal; Mr. F. S. Haydon, Beaver Colony House, and Beaver handiwork; Mr. A. L. Jones, Natural Bridge Virginia, Devonian Formation, Pa.; Mr. Gilbert C. Klingel, Meadowlark, Leopard Frog, Cooper's Hawk (young), Arum and the " Basilisk " and by Mr. E. McColgan, the Bat fish.

The Department of Geology had a display of Miocene Fossils and Mr. F. S. Haydon a display of Cretaceous Fossils.

SUMMARY REPORT OF THE RECENT ACTIVITIES OF THE DEPARTMENT OF GEOLOGY

A.Llewellyn Jones, Curator

Aug. 31st & Sept. 1st- trip to Natural Bridge, Va., Shanandoah Caverns near New

Market, Va., and Lakeland Caverns in Charlestown, W.Va.

Sept. 14th- trip to the rocks of Deer Creek, Md., about 9 miles North of Belair, Md.

Oct. 4th- trip to the sand pits of J. Link & Sons, and the Caton Sand Co., on the Washington Bl'vd near Lansdowne, Md.

Oct. 11th- trip to the abandoned clay pits of the Balto. Brick Co., North & South of the Washington Bl'vd between Caton & De Soto Rds. Here a number of specimens of fossil wood were found in hemitite.

Oct. 12th- trip to Bodkin Point at the mouth of the Patapsco River.

Oct. 19th- trip to Bare Hills quarry at Falls Rd. and Old Pimlico Rd.

Oct. 25th- trip to Gwynn Falls quarry and Hilton quarry in Gwynns Falls Park South of Edmondson Ave.

Oct. 26th- trip to Loch Raven near Ashland, and then to Beaver Dam Marble quarry at Cockeysville then to the quarry of the Md. Calcite Company at Texas then to the Gunpowder quarry one half mile S. of Cockeysville.

The above trips were made by the curator of the Dept. assisted by Mr. Chas. F. Svec. Photographs were made and representative sample of the minerals was taken at each location.

TRUSTEES MEETING

The quarterly meeting of the Board of Trustees was held October 17th, 1930.

Owing to the contemplated trip of two Trustees on our West Indian Expedition and which might handicap the functioning of the Board, as five are necessary for a quorum. Mr. W. W. Coleman resigned and Mr.

Edward McColgan was elected to serve his unexpired term.

The President made the following appointments :

The Executive Committee

Mr. Sidney L. Garman, Chairman, and Messrs F. S. Haydon and A. Llewellyn Jones.

The Finance Committee,

Mr. E. B. Fladung, Chairman and Messrs E. McColgan and Stansbury Haydon.

The Publication Committee

Mr. F. S. Haydon, Chairman and Messrs E. B. Fladung, Gilbert C. Klingel, E. R. Polacek, W. W. Coleman, A. L. Jones and A. D. Zachary.

L E C T U R E

On December 2nd the Society had the pleasure of hearing an illustrated lecture on the Oberammergau Passion Play by Mr. Edward McColgan.

Mr. McColgan gave the History of this classical performance in conjunction with the lecture; which he attended on his resent trip to Europe.

The lecture was illustrated with 64 colored slides.

EXPEDITION MATERIAL

So far considerable material has been received from the Inagua Island B. W. I. consisting of Insects and Moluscs.

The Insects are being prepared and mounted by Mr. Eugene R. Polacek of the department of Entomology.

The material will shortly be on exhibit for our members

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol.1. Baltimore No 7
January & February 1931

COMPOSITION IN NATURE PHOTOGRAPHY

This organization has recognized the Value of photography as an aid in recording the Natural History of our State. We have improved the technical quality of our records and now I believe we should pay some attention to the composition of our picture.

This element seems lacking in almost all the nature pictures I have observed. Nature photographers seem satisfied if they get a recognizable picture of the object to be photographed and pay little attention to the arrangement of the subject, lighting, background etc. This is usually excused by the naturalist by stating that nature objects are difficult to photograph due to adverse lighting conditions and that such subjects can not be arranged according to the photographers fancy.

By pictorial composition we simply mean the arrangements of the component parts of the picture so as to present the whole in a unified manner. In arranging any subject the matter of prime importance is the placing of it in a position where its outstand-

ing feature cannot, or will not be overlooked; and all other features are of more or less secondary or contrasting importance.

So in an endeavor to make our nature picture actually artistic expressions of our ideas, and not mere photographic records, we must select, with profound care, the most arresting quality of the subject and first engage ourselves in setting that forth in a striking manner and then compose our background, "atmosphere", in artistically conceived contrast, not only to emphasize the subject itself, but to enhance it and make the whole an individually engaging photograph comprising all completely well studied phases of subject and background.

Alvin D. Zachary.

THE AMERICAN MUSEUM OF NATURAL HISTORY
AND
NATURAL HISTORY SOCIETY OF MARYLAND
West Indian Herpetological Expedition

By this time our members and friends are acquainted with the fact that the yawl "Basilisk" has been wrecked while on this expedition. Nevertheless, the expedition is being continued although not on the extensive scale as originally planned.

The "Basilisk" left Baltimore for the Magothy River on October 30th for final stowage. Leaving the Magothy November 3rd for Oxford Md., where final adjustments were made, the vessel set sail on November 14th for Hampton Roads. On November 24th, winds being favorable, the Expedition headed south with Mr. Gilbert C. Klingel, Curator of Herpetology and Leader of the Expedition, and Mr. W. Wallace Coleman, Curator of Ornithology.

On the second day they encountered a terrific storm, which lasted over fourteen days. The yawl weathered the hurricane admirably although some of the rigging was damaged by the fearful waves and gale.

The morning of December 8th brought a calm with clear skies, but very heavy seas. at 6 P.M. land was sighted, but the exact longitude could not be determined, the chronometer having developed a serious error during the storm. The vessel hove to about eight miles from land to await morning, for the purpose of ascertaining the position if this were possible with the damaged chronometer. Early on the morning of the 9th, with very heavy seas running, and darkness enveloping everything, without any warning, a loud grating sound was heard, and the vessel vibrated violently; the "Basilisk" had been driven on a reef during the night, owing to the tremendous seas. All efforts to dislodge the vessel were of no avail, and every wave with contrary wind drove her higher and higher upon the reef. Realizing their position, Mr. Klingel and Mr. Coleman proceeded at once to save all equipment and food possible before the ship should go to pieces. Before nightfall practically everything of value and importance had been salvaged.

The next morning Mr. Klingel set out in quest of help. It was then that he learned their position to be the north east cape of Great Inagua Island, B. W. I., the most southerly of the Bahama Group. At Matthewtown aid was secured through the assistance of Mr. Eric Jones, a British Government Engineer. Mr. Jones and his associates rendered Mr. Klingel and Mr. Coleman all possible aid in salvaging the vessel's equipment and supplies, and to establish a working base and laboratory near Matthewtown. The scientific importance of Inagua was first realized when

the following CABLEGRAM was received from the American Museum of Natural History;
"Grateful both safe; good work; admire your splendid endeavor, fortitude and devotion. Delighted you are on Inagua, very important. Noble writing, Happy New Year."

Sherwood'.

Since the disaster the expedition has been at work, and on January 14th Mr. Coleman returned on the S.S.Flora with over 500 lizards representing five genera of which very little is now known. He also brought a large number of photographs which are now in the process of development.

Mr. Klingel will remain on Greater Inagua for several months. Very little has been done on this island for many years, and in fact no Naturalist has set foot upon it since the days of Agassiz.

MERIT BADGE FACULTY
of
THE BOY SCOUTS OF AMERICA

Our Society has been endeavoring to promote interest in Natural History and allied sciences or in whatever branch our members can assist as advisors and examiners.

At present we have the following on this faculty; Mr. E. R. Polacek as advisor and examiner in Insect Life; Mr. Paul Watson as advisor and examiner in Astronomy; Mr. Edward O. Wegner as advisor and examiner in Electricity.

Mr. Gilbert C. Klingel, prior to the sailing of the West Indian Expedition, was advisor and examiner in Reptile Life. No doubt Mr. Klingel will resume this work upon his return from the Indies.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. 1 Baltimore, March - April 1931 No. 8

BIRD IMMIGRANTS IN AMERICA
1
THE ENGLISH SPARROW

Throughout the winter no representative of our bird life has been more frequently observed than the English Sparrow.

The very familiarity of a subject often lessens our curiosity, but if we start investigating, a number of interesting facts may be disclosed.

The true name is not English Sparrow, but House Sparrow, (Passer domesticus) as it was originally by no means confined to England alone, but common over nearly the entire European Continent. The explanation of this misnomer is easily understood. Our nearest European relative being England, the majority of our international natural history efforts have been carried on with the help of the Mother Country.

Most of the birds in question brought to America were imported from England which explains the origin of the misleading name.

The first House Sparrows were brought to this country in 1850, under the direction of the Brooklyn Institute which imported eight pair. However, they

failed to thrive and in 1852 were introduced and being cared for through the winter, were liberated in the Spring of 1853 at Greenwood Cemetary, New York, where they did well and multiplied. From this time on a number of small importations were made by several of the more progressive municipalities, and in 1869 Philadelphia introduced one thousand birds. By 1873 there were colonies established from Boston to San Francisco and from Cleveland to Galvanston.

Thus we see that the reason for its being so widely spread is due to the enthusiasm it met in the United States and not because it was a professed traveler. It is gratifying to know that at least so far as authentic records show there is no proof that Maryland played any part in the introduction of this species which unfortunately has proved so pestiferous and incompatible with our native birds.

W. W. Coleman,
Curator of Ornithology

W. W. COLEMAN RETURNS

W. W. Coleman, Curator of Ornithology who accompanied Gilbert C. Klingel on the West Indies Herpetological Expedition returned to the United States January 26th. Owing to the loss of the "Basilisk" some changes had to be made in the itinerary of the Expedition. Mr. Coleman stopped in New York to deliver some thousand of lizards to the American Museum of Natural History.

Mr. Coleman brought a quantity of insects and molluscs from the Great Inagua, which were collected for the Society.

Mr. Klingel has continued to Haiti and San Domingo where he will make some studies and collect reptiles for the Society and the American Museum.

A NEW PUBLICATION

A new publication on "Notes on Color Variation of Lepidoptera with Reference to Climatic & Weather Conditions," was issued and sent to all the members.

The pamphlet is the work of F. Stansbury Haydon, Curator of Entomology.

TRUSTEES MEETING

The quarterly meeting of the Board of Trustees was held January 30th.

An amendment to the Constitution was proposed giving the Board of the Trustees the power to raise any member from second to first class. The Amendment will be submitted to all members of the first class sometime during the year.

With the approval of the Board the President appointed F. S. Haydon, A. Llewellyn Jones, and W. W. Coleman as a nominating committee to nominate three members for Trustees in place of Sidney L. Garman, Gilbert C. Klingel and Edward McColgan whose terms expire this coming March.

ANNUAL MEETING

March 10th our Society has passed the second year of its existence. The annual meeting was purely a business meeting.

The President made his address showing the rapid progress of the Society. The report was too lengthy for the Bulletin, but will be published under separate cover and mailed to all the members.

The Secretary announced the election of Trustees to serve until March 1934, they are: Mr. Sidney L. Garman, Mr. Gilbert C. Klingel, and Mr. Ed. McColgan.

Other reports were read by Mr. Haydon the Secretary, Mr. McColgan the Treasurer.

Reports were read by the following Curators: A. L. Jones, Department of Geology; W. W. Coleman, Department of Ornithology; E. B. Fladung for the Curator of Herpetology; F. S. Haydon, Entomology, and Sidney L. Garman.

LECTURES

On February 24th the Society had the pleasure of hearing Mr. Herbert C. Moore, talk on the mineral deposit of Bare Hills, Maryland.

Mr. Moore spoke on the various deposits and the history of the commercial business connected with these well known deposits. The various copper and chrome industries which were developed at various times.

The lecture will be published as one of the transactions of the Society.

Dr. Ernest Cory, State Entomologist gave a lecture to the Society on March 24th.

Dr. Cory spoke on the recent advancements in the field of Entomology. Also spoke on the economic work that is being done in this State.

An interesting travel talk was given by Mr. John D. Elder on March 31st.

With the aid of motion pictures made by Mr. Elder the Society was taken from New York to England, Scotland, France, Germany, Italy, and Spain.

Mr. Elder will deliver another lecture to the Society next fall.

◆ *BULLETIN* ◆

Vol. 1 Baltimore,Maryland. May 1931 No. 9

THE ANT LION, AN INSECT TRAPPER

Among the myriad forms of insect life we find a number of very clever trappers and hunters. The solitary wasps are usually excellent hunters of their prey; the beetles count among their numbers some huntsmen of unusual ability; and the spiders, although not strictly insects, are famed for their traps and snares. One of the cleverest types of insect trappers are the members of the Family Myrmelionidae of the Order Neuroptera, or "Ant Lions." The imagoes of these creatures are very graceful and beautiful insects, with long, slender bodies, similar to those of the Damsel flies of the Order Odanata. The antennae are short, and thickened at the extremeties. The wings are long and narrow, very delicate in structure, and crossed and recrossed with many veins, creating numerous small cells, including one very long and narrow cell which is peculiar to the members of this family.

The trapping characteristic is present in the larval stage only. The larvae, ungainly little creatures, with small legs and very large mandibles, excavate small pitfalls in sandy places, usually

sheltered under the edges of overhanging rocks, removing the sand with a peculiar upward movement of the flattened head, using the jaws and head as a diminutive shovel. The pits are dug in such a manner as to become perfect inverted cones, with steep sides, slippery on account of the loose nature of the sand. The sand removed from the pit is thrown loosely about the edges of the crater, so as to slide in at the slightest weight. The larva then buries itself all but its head and jaws in the bottom of the pit, and awaits its prey.

Ants very naturally frequent sandy places, and it is by this fact that the ant lion gains many victims in selecting the sandy places for his pit fall. Persons who have studied ants will remember that these creatures move very rapidly, and are quite careless of obstacles. The ants therefore are unaware of the pit-fall until they have moved upon the loose sand piled about the edges. This sand immediately gives way and carrying the ant with it, falls into the conical pit. The ant very naturally falls directly into the jaws of the ant lion, which are waiting at the apex of the cone-like opening.

If the ants, by extreme struggling and clinging to the steep sides of the pit, succeed in avoiding the jaws of the ant lion, the latter tosses sand against the wall below the victim, causing the side to give way beneath the ant; and it has been often noted that the ant lion will shower the struggling ant with sand, forcibly knocking it down to be devoured.

The instinct of selecting the areas frequented by ants, the geometrical precision with which the conical pit is dug, the manner in which the loose sand is arranged at the edges of the pit, and the method of throwing sand at an escaping victim, all these factors make this creature one of the cleverest trappers of the Insect World, and a wonder to those who study Hexapods.

F. Stansbury Haydon,
Curator
Department of Entomology

IN NATURAL HISTORY

An account of the recent Herpetological expedition of our Society in conjunction with the American Museum appeared in the January & February number of Natural History.

The article was written by Dr. G. K. Noble, Curator of Herpetology of the American Museum.

The article covers some eight pages of which are some eleven half tone pictures of the "Basilisk" interior and exterior and Mr. Klingel and Mr. Coleman. The photographs were made by Mr. Wm. G. Hassler of the Museum Staff and Mr. E. B. Fladung of our Society.

OUR SEMI-ANNUAL GUEST EVENING

Our fourth Semi-Annual Guest Evening was held on April 28th.

The usual nature motion picture was part of the evening's program, featuring "Falling Waters" a one-reel movie of various Canadian and American water falls and "Kicking Horse Trails" a one-reel movie of the famous historical trail. The pictures were loaned to us through the courtesy of the American Museum of Natural History, New York.

At the request of our members and guests, Mr. Klingel's motion picture of the Rhinoceras Iguana was shown again.

An exhibition of Nature photographs just recently made were exhibited.

Mr. Edward McColgan featured gulls in four enlargements. Also photographs of Sand Pipers, Ferns, and Alligators. Mr. Coleman exhibited a Scorpian from Inagua, and White Heath Asters. Mr. Klingel: Box Turtle, American Copper and Little Green Heron. Mr. Fladung: The American Buffalo.

After the program Tea was served.

The first annual exhibition to the public of Baltimore was held at the Baltimore Museum of Art from May first to the thirty-first.

Although the exhibition was to be for fifteen days, at the request of the Art Museum, it was continued through the month.

The following were exhibitors at the Museum: Messrs. G. C. Klingel, W. W. Coleman, A. D. Zachary, F. S. Haydon, E. McColgan and E. B. Fladung.

Twenty-six prints depicting mammals, birds, reptiles, batrachians, insects, and plants were exhibited.

The exhibition attracted unusual attention by the public and the press.

TRUSTEES MEETING

The quarterly meeting of the Board of Trustees was held on April the 13th.

This is the first meeting of the new Board at which the Officers for the Society are elected. The following were elected:-

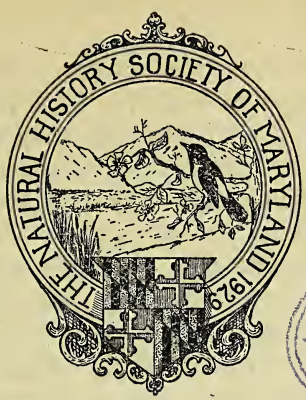
President - - - - - - - Edmund B. Fladung
Vice President - - - - Gilbert C. Klingel
Secretary - - - - - - - F. Stansbury Haydon
Treasurer - - - - - - - Edward McColgan
Assistant Secretary - - A. Llewellyn Jones

Through the action of the Board a Department of Archaeology was opened and Mr. Latison C. Whilhelm was appointed Curator.

Resolution of Sympathy were adopted and extended to our President, Mr. Edmund B. Fladung on the death of his mother and to our member Mr. Hugo Reiss for the same loss.

WRECK OF THE "BASILISK"

An account of wreck of the "Basilisk" was published in Natural History in the March and April number. Accounts have appeared in all the New York and Baltimore papers as well as in many others.



BULLETIN

Vol. 1 Baltimore, Maryland June 1931 No. 10

INAGUAN STUDIES
Humming-birds

Among the most interesting forms of life to be found on the Great Inagua Island, Bahamas, are the humming-birds. On this flat, arid, salty land mass the paucity of bird and animal life is one of the most noticeable features. The humming-birds are an exception. They are everywhere. Extremely tame, darting here and there, feeding on the cactus blossoms, occasionally lighting on a twig or thorn, chirping in odd notes and buzzing like bees they are most entertaining.

There are several species, but the most numerous is a species that has no common name. The scientific name is Doricha lyrura. In common with most humming-birds it is a beautiful little creature, brilliantly colored with emerald green over the back, gorget of iridescent royal purple and breast of soft rose. The tail is reddish brown.

One breezy afternoon I was seated in the one room hut that made the expedition headquarters, when an angry buzzing against the screen attracted my attention. A "hummer" had entered the open door and was

trying to penetrate the transparent screening. I picked him off the mesh, placed him in a nearby lizard cage and continued writing. I had hardly started when another began buzzing at the screen. I captured him too. For a few moments I admired the two gorgeous birds preening their ruffled feathers in the cage. They were quite composed and went about the feather cleaning quite methodically, chirping the while and paying me not the least bit of attention. Even when I picked them up they did not struggle but lay quietly in my hand. After a bit I opened the cage door and allowed them to escape. They flew up into the rafters and began flying back and forth. As I settled back in my chair they seemed to have forgotten my presence. I lay back and watched.

One was perched on a rafter when the other backed the entire length of the hut and rushed headlong at the sitting bird. The impact knocked him clean off his perch, but he recovered before he had fallen far and retaliated with a rush. Back and forth they swooped, wings a blur and squeaking and calling in trilling crescendoes. Suddenly as if a truce had been declared the two sat side by side on a convenient beam and carefully preened and combed their ruffled feathers. The open door and myself were ignored. The battle, if battle it was, started again. I watched, fascinated. The impacts of their meetings were terrific. Again the birds rested.

Half an hour later they were still at it when I left for dinner. The door was carefully let open so that they could escape.

On my return I looked in vain among the rafters for the birds. They were not there. My eye fell on the cot. In the center was a tiny fluff of bedraggled feathers. It was one of the "hummers." The bird was still alive but very weak. It lay quietly in my hand but continually sent up series after series of discordant squeaks. I perched him on the edge of a prickly pear blossom. The bird drank once, twice, rested and very weakly flew between two large cactii and out of sight.

Gilbert C. Klingel.

NOTICE

The article on Humming-birds from the recent Herpetological Expedition in the West Indies is one of a series of articles which will appear in the Bulletin.

Mr. Klingel, Curator of Herpetology will write articles on animal, plant and native life on the Islands of Inagua, Haiti, and San Domingo, where he spent six months for the American Museum of Natural History and our Society.

THE MUSEUM AND NATURAL HISTORY ORGANIZATION OF TODAY AND YESTERDAY

Experience has shown that the Natural History Museum like a business, if it does not keep abreast of the times, will go into decay and gradually lose its value as an educational factor in its community.

The old fashioned idea of a Museum of Natural History in which a species, male and female, was displayed with a Latin name, has passed forever in the history of man.

This sort of Museum served its purpose in past times, when a Society of Natural History consisted of a few men, among whom was one or two moneyed individuals who were its mainstay. It was then that the study of Nature was a hobby of the then intelligent.

With the influx of other forms of amusement this hobby began to decline with the passing of older generation. This fact was realized by men of foresight and great breadth of mind, who had to take stock of their resources and find recruits to keep the study alive. The only means was to make the subject so fascinating as to attract the young and cultivate their taste and desire for this most delightful form of recreation as well as knowledge.

To awaken the desire for the study and pursuit of Nature, the Museum had to be entirely revolutionized. Instead of a lifeless mass of stuffed creatures arranged in a "Noah's Ark" fashioned with (in most instances) meaningless Latin names, the habitat group

has been constructed, displaying mammals, birds, reptiles, insects, etc., in their natural surroundings with natural poses and intelligent labels telling of the life and habits of these creatures. Leaflets, pamphlets, and cards are being sold for a moderate sum, depicting the creatures and their lives in an interesting, understandable manner, instead of bulletins or papers with dry, technical facts.

Other phases of Museum life were corrected. Hithertofore the Museum was almost unapproachable. The layman had the impression that he was not sufficiently learned to enter its portals, which were in charge of a Director or Custodian who held all at arms length and discouraged any work other than that done by himself. The place in general was gloomy and dusty with an air more like a tomb or storehouse.

Today one is welcomed by efficient and courteous men and women who conduct visitors over the building, explaining the various displays and giving information on the work in which one might have an interest. Work and contributions by amateurs are sought and encouraged, classes are conducted and lectures are given to children and grown ups, and a general welcome is extended in well lighted, clean and comfortable quarters.

This evolution is what has saved Natural History and the success has been proved by the growth of many Museums which fifty years ago consisted of but a few men; whereas, those who have pursued the old order of things, have gone into decay and in many cases have ceased to exist.

Under this new order, men of means with civic pride contribute largely and seek the aid of City and State through financial appropriations to foster this wholesome, clean and interesting study, thereby, to help and build useful and cultured citizens out of the youth and to preserve in a proper manner a correct record of the fast vanishing wild life of their native State with the advancement of Civilization.

Edmund B. Fladung

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. 1 Baltimore, Maryland July 1931 No. 11

THE PREPARATION AND MAINTENANCE OF A MODERN STUDY COLLECTION OF INSECTS

To the casual observer who sees an entomologist in the field collecting specimens, the idea is immediately suggested that the collector merely catches his specimen, kills it, pins it in a box and that is all. Possibly half a century ago this would have been in a measure true, for at that time little preparation was done; but today, with modern facilities, advanced knowledge and ideas, the entire picture is changed.

Let us begin with the actual capture of the specimens for the modern study collection. With it are taken all manner of notes and data, such as temperature, food-plant, weather, method of capture, condition and attitude of the specimen when it was taken -- all these items of information are of great importance, as they may later shed light on some unknown facts concerning the particular species. The specimens collected in the field are then taken to the laboratory, and preparations for mounting are begun. They are carefully removed from the field box with forceps, and pinned on an especially prepared spreading or mounting board. The wings are

spread to the proper position with a mounting needle, and held firmly in place with strips of transparent paper. All the information taken in the field is written on a card, one for each specimen, and these cards are numbered. A bit of paper bearing the corresponding number is pinned on the board with each specimen. The specimens are allowed to remain on the board until thoroughly dry, this requiring from one to two weeks or even longer in the case of the very large moths and beetles whose muscles dry very slowly. They are then removed, this operation requiring the greatest care, as the fully dried specimen is extremely brittle and fragile, and injury to wings and antaennae easily occur. The next step in the preparation of the specimen is the labelling. These labels are made as small as is possible, being written in India ink, and placed on the pin beneath the insect. As a rule three labels are used with each specimen, one bearing the collector's name, a second the locality and date, and the third the insect's name and sex. Below these is placed a minute number-label, on which is written the serial number of the particular specimen. This serial number corresponds to the number placed on the collection file card, on which all field data and remarks have been transferred. A complete file of these cards is maintained, so that by referring to the specimen number on the pin on which the insect is mounted, and then looking up the corresponding card, all information concerning that particular specimen can be readily ascertained. This file is self-expanding, so that as the collection increases, complete data on each and every specimen added can be incorporated therein, thus making a complete record of scientific value for the entire collection. The serial numbers include letters indicating orders and suborders, so that these subdivisions of nomenclature and taxonomy can be kept separate.

The specimens themselves are placed in large drawers of a specially designed cabinet, in rows according to Order, Family, genus, and species, with appropriate labels, which must be neatly printed for each subdivision.

The work does not end here, as many might suppose. The collection must be constantly and carefully treated with protective preparations to insure preservation against the ever-present pests, such as the Dernestes beetles which destroy the specimens. For this purpose, small boxes filled with dichloricide are placed in each drawer, and must be continually refilled, as the crystals rapidly evaporate. Small wads of cotton, saturated with carbolic acid, and carbon disulphide are also used, and these too must be replenished at frequent intervals.

Thus it can be seen the immense amount of work entailed in the proper formation and maintenance of a modern study collection of insects, and that the old idea so often surviving today, that the entomologist merely kills and pins his catches, is thoroughly in error.

F. S. Haydon, Curator
Department of Entomology

TRUSTEES' MEETING

The quarterly meeting of the Board of Trustees was held July 8th at the home of Mr. Stansbury Haydon, Trustee and Secretary. Mr. Haydon entertained to Trustees at dinner prior to the meeting.

The President made the following Committee appointments:

Executive Committee

Mr. Gilbert C. Klingel, Chairman, F. S. Haydon, Edward McColgan and the President Ex Officio.

Finance Committee

Mr. Edward McColgan, Chairman, F. S. Haydon, and the President Ex Officio.

The Publication Committee was abolished. All publications will be handled by the Department of Education and Publication which was inaugurated with the President as Curator.

At the same meeting a Department of Conchology was opened with Mr. Charles Svec as Curator.

The entire Staff was reorganized and governing rules with a definite program was adopted. The rules will be presented to the Staff members at a Staff meeting which will be held shortly.

Following are the appointments of the Staff.

DEPARTMENTS

GEOLOGY:	A. Llewellyn Jones,	Curator
	Elra Palmer,	Assistant Curator
	C. Svec,	Staff Assistant
	A. Rubenstein,	Staff Assistant
ENTOMOLOGY:	F. Stansbury Haydon,	Curator
	Sidney L. Garman,	Staff Assistant
	Edgar Gretsky,	Staff Assistant
HERPETOLOGY:	Gilbert C. Klingel,	Curator
ORNITHOLOGY:	W. Wallace Coleman,	Curator
CONCHOLOGY:	Charles Svec,	Curator
	F. S. Haydon,	Assistant Curator
ARCHAEOLOGY:	A. Latison Wilhelm,	Curator
	Albert Rubenstein,	Assistant Curator
	Richard E. Stearn,	Associate Curator
EDUCATION & PUBLICATION:	Edmund B. Fladung,	Curator
	F. S. Haydon,	Editor & Associate
	A. L. Wilhelm,	Publicity & Associate
	William J. Leslie,	Publicity
	Charles H. Waller,	Artist
	Alvin D. Zachary,	Photographer
	H. Corwin Moore,	Lectures
	W. W. Coleman,	Associate
	A. L. Jones,	Associate
	G. C. Klingel,	Associate
	E. McColgan,	Associate
LIBRARY:	Edward McColgan,	Librarian
	S. Garman,	Assistant Librarian
	Eugene R. Polacek,	Assistant Librarian

The President is Chief of the Staff and ex officio member of all departments.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. 1 Baltimore, Maryland - August, 1931 No.12

INDIAN ARROWHEADS AND ARROWS

Editor's Note:

The following is one of a series of articles on weapons, pottery, and customs of Maryland Indians, by Albert Rubenstein, Assistant Curator of the Department of Archaeology.

In the lives of the aboriginal inhabitants of Maryland the arrowhead and arrow were very important items in the struggle for existence. To the present age, they are merely relics of our early native races, and of casual interest to collectors, and students of Archaeology, but to the early Indians, they were one of the mainstays of their livelihood, being the means of securing food, clothing, and protection from wild beasts and hostile enemies. The arrowhead attached to its shaft and sped by the bow was a very satisfactory provider, being used to shoot fish and all sorts of game for food. It was also most effective as a weapon in attack and especially adaptable to Indian warfare, as projected from cover of trees and underbrush, as was habitually the Indian mode of fighting, it was capable of a high degree of execution without exposing the user to any great amount of danger. However, due to the fact that the supply of each warrior was never very large, casualties in Indian warfare were never great, the bowmen usually discharging their supply, and retreating.

The materials used in the manufacturing of arrowheads were: bills of birds, spurs of the turkey, sharpened bones two or three inches long, pebbles and boulders from numerous gravel beds and various minerals, namely, quartz, quartzites, rhyolites, hematite, flints, jasper and chalcedony.

In converting the pebbles or boulders into the desired shapes, the flaking and pressure process was used, being a routine of breaking, flaking and chipping. The raw material was broken by heavy blows into an approximate shape which was then flaked into a more finished form by free hand percussion. Then pressure was applied to this form where needed to flake or chip it into the desired finished form. Chipping was done by a strong bone devoid of any fat or grease to avoid slipping. This was set in a wooden handle.

Sizes and shapes of the finished arrow points vary from a slender point about five-eighths of an inch to a point about two inches wide; from a short point one-half inch long to a long point about three inches long. The sketches shown are ideal of the many shapes and sizes of arrowheads, although their variations are numerous. The finished point was attached to the shaft, a straight young sprig, with a glue made of deer's horns boiled to a jelly which would not dissolve in cold water and then bound with a sinew to secure it. A beaver tooth or a similar tooth or sharp object usually set in a wooden handle was used to notch the arrow at its feathered end. This notch was applied to the bowstring when the arrow was sped on its useful way.

Albert Rubenstein
Assistant Curator of Archaeology

FACTS ABOUT MARYLAND MINERALS

GOLD

Editor's Note:

The following is one of a series of articles which will appear in the Bulletin from time to time on various minerals of Maryland. The articles will be written by Mr. Elra Palmer, Assistant Curator of the Department of Geology.

Gold was first discovered in Maryland near Sandy Springs in 1849, coincident with the California gold rush of the same year.

Several mines and prospects were opened in the state all near Cropley, in Montgomery County. In 1905 extensive mining operations were reported. The Maryland Gold Mining Company sunk a shaft one hundred and eighty feet deep and used a ten stamp mill. The Great Falls Gold Mining Company had similar equipment. Both companies, however, ceased operations in 1907, due to the hardness of the gangue (rock containing ore), which greatly increased the cost of operations. The annual output varied according to the activity or idleness of the operators, ranging from nothing to $15,000.

Although at present date no company is operating these old mines, occasionally a farmer will bring to the mint a few ounces of gold dust which he laboriously panned at these old sites.

Elra M. Palmer,
Assistant Curator of Geology

RENOVATION OF THE SOCIETY'S QUARTERS

During the summer months the quarters of the Society have been renovated.

The Assembly Room has been cleaned and painted. New curtains have been hung, which were presented by Mrs. William Haydon, and new electric fixtures have been installed through the generosity of Mr. Elra M. Palmer and Mr. Gilbert C. Klingel.

The Library has been removed to the exhibition room and new shelves have been built for the books, and a large exhibition case, with glass shelves and internally illuminated has been installed. The case was made by Mr. Edward O. Wegner and the lighting effects was taken care of by Mr. A. Llewellyn Jones. This exhibition case will display our excellent mineral collection as well as a representative exhibit of Maryland Fossils.

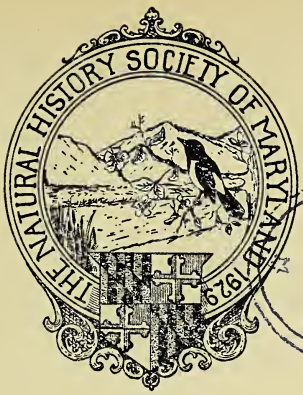
A nine drawer cabinet has been made to house the most important of our insect collection. The cabinet is the gift of Mr. Edward McColgan.

A Roster containing the names of the Officers, Trustees, Heads of Departments and Members of the Society has been prepared by Mr. Charles H. Waller, Baltimore's foremost Pen Artist. At the top of the Roster, which is 2x3 feet in size, is the Great Seal of the State of Maryland -- The Calvert Arms, beautifully illuminated by Mr. Waller. Directly over the Seal is the name of the Society, lettered in fine Old English. The names of the membership follow in a neat and quite unique arrangement. The Roster was framed by Mr. E. B. Fladung.

All funds for these improvements have been contributed by various members of the Society.

We trust we will shortly be able to install a case for our collection of Indian pottery, arrowheads, etc., as well as a case for our large shell collection.

The renovation and new equipment has given the place a cozy and Museum-like atmosphere which reflects the interest and excellent taste displayed by the members of the Society.



BULLETIN

Vol. II Baltimore, Maryland - September 1931 No. 1

SOME OBSERVATIONS ON THE CANADIAN BEAVER

Among the numerous mammals native to this country, possibly one of the most unique in its habits and customs is the Canadian Beaver. This mammal is extremely rare in Maryland, and observations of it have not been officially reported in this State for many years. It belongs to the class of aquatic rodents, and by nature is of the Social type, congregating in colonies, although not in large numbers.

The specimens from which these observations were made were, unfortunately, not studied in Maryland, but in Monroe County, Pennsylvania, at Pocono Lake. The colony consisted of several adult specimens, three being definitely noted. There may have been more, but no more than three ever appeared in the vicinity at the same time. They were large size, and of rich sepia brown color, with the characteristic broad, flat tails. These specimens were apparently untroubled by the presence of human beings, for they chose a location for a habitat which was constantly frequented by many persons. This seemed a bit strange, as usually these creatures are quite shy, and will avoid human beings whenever possible. Here, they had apparently come from the more remote mountains to make a densely

settled place their home. They were naturally expert swimmers, after the nature of their kind, and being disturbed when in the water, they would slap the water with their tails with great vigour, making quite a loud report and splash. This characteristic is well known among beavers, and it serves as a signal of danger to others who might not be aware of approaching enemies. Not only is it their custom to do this when in the water, but also when on land, particularly when several of them are engaged in cutting trees. If one senses danger, he slaps the earth with his tail, making a loud thumping sound, which serves as a signal for all of these mammals to seek safety in the water.

Evidences of their work in felling trees for the construction of their colony house and dam were present everywhere adjacent to the stream where the creatures lived. Countless stumps of small saplings, neatly cut off in symmetrical cone-shaped spikes were along the stream. Some large full sized trees had also been cut down, and being too large for the small mammals to drag to the water, had been stripped of their limbs. It was noted that in every case the tree had been cut so that it had fallen toward the water. This shows intelligence to a high degree.

The colony house was a large affair, some eight feet across the top, which protruded above the water approximately eighteen inches. The peak was constructed with open work, to allow passage of air to the open water underneath. The main structure was composed of branches, limbs, sticks, and mud. It was quite strongly built, and supported the weight of several persons.

At some distance below the stream the beavers had constructed a dam, to provide deep water for their protection and pleasure. The dam was strongly built of saplings, brush, sticks, and cemented with clay. It was noticed that the sharp spike-ends of the cut saplings were always placed so as to point upstream, with the apparent intention of catching any debris and matter floated or washed down stream, thus materially strengthening the structure of the dam. This had worked out well,

for large quantities of branches, leaves, and other matter were noted tightly lodged in the comb like rim of the dam. The dam had raised the level of the water of the stream some five feet from its original bed. It was placed at a point where the stream was approximately twenty-five feet wide.

One curious habit noticed was the mode of feeding. The creatures would go ashore and secure a branch of their food tree - they were mostly observed feeding on the bark of White Birch, and carry it into the shallows, and when half submerged in the water, would proceed to eat, and not until then. They were often seen swimming toward the colony house with sticks of birch in their jaws, apparently waiting until they were in the safety of their home to devour the bark. Or they may have been carrying them there to make repairs on the house. This is a matter of conjecture.

Further observations on the habits of these creatures was curtailed due to my leaving the vicinity.

F. Stansbury Haydon

THE BULLETIN

With this issue commences a new volume of the Bulletin.

Volume I contained forty-eight pages of articles on various Maryland and other nature subjects, as well as news items, showing the activities and progress of the Society.

The second volume promises to have more nature articles owing to our larger Staff. We hope to be more punctual in issuing this volume than the last, which we were compelled on several occasions to issue bi-monthly owing to the great amount of work with a limited Staff.

As most of our members are saving the Bulletin so as to have it bound, we are numbering the pages continuous with Volume I. Also an index will be mailed to every member with the last number of this

volume. This will make a fair sized book. Many comments on our articles have been received from non-members and the press. Also request for copies of the Bulletin has caused our non-member mailing list to double itself during the year. We are pleased to mail anyone interested in Maryland Nature or our Society, a copy of the Bulletin upon request.

Articles from non-members are welcomed, with the proviso that the editor reserves the right to reject or cut the article as his judgment sees fit.

STAFF MEETING

A meeting of the entire Staff was held on September 11, 1931. Of the eighteen members of the Staff, sixteen attended, being practically the entire representation of our now eight functioning Departments.

The President opened the meeting explaining the functioning of the Staff with relation to the Society. The rules as formulated by the Board of Trustees was adopted.

Following the meeting a smoker was held for all Staff members.

LECTURE

September twenty-second opened the lecture season of the Society with a lecture by Dr. A. L. Dryden of the Maryland Geological Survey. Dr. Dryden spoke on the Miocene formation of the Calvert Cliffs, one of Maryland's most world wide known deposits.

Additional Departmental Contributions

In our last issue of the Bulletin we expressed our desire for an exhibition cabinet for our Department of Archaeology, through the generosity of Mr. Richard Stearns this necessity was realized.

Also the Department of Entomology was the recipient of a number of insect cases through the generosity of Mr. Eugene R. Polacek.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. II Baltimore, Maryland - October 1931 No. 2

INAGUAN STUDIES
Flamingo

Frank M. Chapman, veteran ornithologist once said of the flamingo, "There are birds larger than the flamingo and there are birds more beautiful than the flamingo, but there is no bird, as large and as beautiful as the flamingo." And he is right.

I shall never forget my first sight of a flamingo flock. It was on the day we were shipwrecked on Inagua Island. We had made a rough camp on a bluff overlooking the sea. Below us and to one side stretched a semi-circular lagoon, turquoise blue, and coral fringed. The sun was setting and tingeing the tree tops with orange and gold. We walked down to the now shadowy beach. From high overhead came a faint "honking". In resplendent V-shaped formation a scarlet line of flamingo circled us and with wings ablaze, with the last rays of the setting sun disappeared into the gathering twilight.

In the days that followed we saw numbers of the big birds. Great Inagua is dotted with hundreds of small ponds and lakes, most of them very shallow. These are favorite haunts of the flamingo and it is seldom that there was not one or two birds wading about each lake. It would be diffi-

cult to estimate the number of birds that make Inagua their home but two thousand birds would not be an exaggerated figure. In the big saltpond near Mathewtown only a short distance from our headquarters, we almost always could find a hundred or a hundred fifty of the big birds. In the distance they looked like a great pink cloud resting on the water.

The flamingo of Inagua is one of the large colonies of these birds left on the Bahamas Islands. The famous colony of Andros Island was largely destroyed by the 1928 hurrican and it will be some years before the birds there regain their former numbers, ifthey ever do. Flamingoes are to be found on other islands of the Bahamas group but by no means are the flocks as large as those on Inagua. The British Colonial Government protects the flamingo as well as it is able but unfortunately, in spite of legislation, large numbers of the birds are shot each year by the natives.

The Inaguan flamingo breed in a colony on the far side of the great lake that occupies the center of the Island. The nests are made of mud piled up in cone shape to the height of approximately a foot and a half. The eggs are laid in a depression on the top. At the time we left the island the birds were beginning to disappear inland for the nesting season. One by one, and by twos and threes they left the saltpond for the great lake. On the last day that I spent on the island I walked back to the saltpond for a last look at the beautiful birds. There were only a few left. I walked over to them. They let me approach to within fifty feet and with shrill cries flew higher and higher, circled a few times, and straight as a beeline flew inland. The saltpond was empty.

Gilbert C. Klingel
Curator of Herpetology.

BIRD IMMIGRANTS IN MARYLAND
The European Starling

The starling (Sturnus vulgaris) whose importation followed that of the house sparrow and which bids fair to become just as great a nuisance is certainly the second most familiar naturalized bird citizen in our state. Although the starling was unknown

in this country before 1890, whereas the house sparrow had established itself successfully, if n not firmly, by 1866. The speed of distribution promises to exceed that of the first alien.

Released in Central Park in 1890 by Mr. Schieffelin they nested that very year upon the building of the Natural History.** During the ten years that f followed, their number steadily increased and they spread out over more territory. Their trend appeared to be North and South rather than Western, due no doubt to the mountains and the absence of cities. By 1910, their southern boundary included Philadelphia and by 1920 it was known from Maine to Virginia and as far wast as Ohio, having crossed the Allegheny mountains. With the government receiving varying reports, it is impossible to state the definite range limit of the bird today.X

There are several reasons to account for the tremendous increase of bird population limited to this one species, the most important of course being its adaptability.

The species manages to withstand both extremes of temperature, and whether it is a year of drought or flood, feast or famine, the starling race goes on. With the exception of the house sparrow it has no competition worth mentioning in its battle for existence and being a rather pugnacious creature this factor is negligible. Migration, a feature that always makes considerable demand upon our native bird life does not even concern the starling. His movements are governed solely by the abundance or scarcity of food.

* The European Starling as an American Citizen. Chapman, Natural History, 1925.

X Spread of the European Starling in North America. Cooke, U. S. Dept. of Agriculture.

W. Wallace Coleman,
Curator of Ornithology.

TRUSTEES MEETING

The quarterly meeting of the Board of Trustees was held on October 30, 1931.

Mr. Latison Wilhelm, Curator of Archaeology, resigned as Curator of the department owing to the lack of time, whereupon the Board appointed Albert

Rubenstein was appointed from assistant Curator to Curator and Mr. Latison Wilhelm as Assistant Curator

By the action of the Board, the President, Mr. Edmund B. Fladung, was elected a life member of the society.

Resolutions of thanks and appreciation were voted to Mr. Charles H. Waller for the beautiful roster of the Officers and Members of the Society, which he engrossed and presented to the Society. A like resolution of thanks and appreciation were voted Mr. Edward O. Wegner who gave his time and material in building the new exhibition cases for the Society

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FIELD WORK

This season particular stress was laid on the field work of the Society.

Every week two and sometimes as many as four departments spent from one to two days a week in the field.

The Department of Archaeology had two to three men in the field every week.

The Department of Geology conducted trips to many localities outside the State as well as within the State.

The Department of Entomology and Ornithology was in the field with from one to six members.

ERRATA

The last paragraph of the article on Canadian Beaver should read; "were curtailed" instead of "was curtailed".

Reference was made on the Article on Additional Contributions that an exhibition cabinet for the Department of Archaeology was the gift of Mr. Richard Stearns. and Mr. Albert Rubenstein and Mr. Richard Stearns Presented the cabinet in question.

The Society regrets these errors.

BULLETIN

Vol. 11 Baltimore, Maryland - November 1931 No.3

Maryland's "Verde Antique".

"Believe it or not", as Ripley would say, but Maryland marble reaches the sky. The Empire State building in New York City is faced with serpentine taken from the quarries at Cardiff, Maryland. This green marble should be familiar to all of us, for all one has to do is to walk down Charles Street and observe the store fronts, many of which are very attractively faced with this beautiful marble.

Serpentine marble is known commercially as Verde Antique. The name serpentine is probably of Greek derivation meaning snake, named such either on account of the mottled appearance of the marble, or the fact that the ancient Greeks believed the stone to be an antidote for snake bites. The Greek name being later translated into Latin Serpentaria, by Agricola in 1546 (ref . Md. Geo. Survey, Vol.12)

We as Marylanders, should be exceptionally proud that such marble is quarried in our State; for although there are numerous deposits of serpentine throughout the United States, only four are workable for marble, most deposits being used for ballast.

The Cardiff quarry is approximately 250 feet

deep. At the bottom there are two large tunnels in which nearly all present work is being done. The only means of descent into this quarry is a breath-taking and hair rising ride in a swaying bucket. The marble is quarried in large blocks weighing anywhere from ten to thirty-five tons, the blocks being hoisted from the floor of the quarry by a giant derrick. The blocks are then sawed into slabs of varying thicknrsses. The sawing is done with steel saws and sand-loaded water. Ten days and nights of continual sawing is generally required to saw a block weighing approximately fifteen tons. These slabs are then sent to the polishing house where they are cut and polished into the suitable sizes.

It is of interest to note the many and varied uses of serpentine. Rock too soft to be used as marble is crushed into many sizes, The smaller sizes are used as stucco, the larger sizes for road ballast, while the dust from the crushers and saws is bagged and used in concrete for road and foundation work. In this manner all rock taken from the quarry is utilized with a very small loss.

Elra M. Palmer,
Asst. Curator of Geology.

CEREMONIAL STONES OF THE MARYLAND INDIANS.

Among the Indian antiquities found on the ancient village sites of Maryland are objects made of slate and other stones to a limited extent. These are called gorgets, pendents and Bannerstones and each has a specialized form.

The gorget is a perferated tablet usually threeor four inches long and , half as wide and about a quarter of an inch in thickness. In the center, about an inch apart are two holes bored in line with the longest dimension. In some instances gorgets are found with merely two perferations. Theusual shapes range from an oval, sometimes with pointed ends to rectangular with straight, convex

or concave sides; some are decorated with notches or tally marks around the edges.

The pendent differs fromthe gorgets in having but one hole, either in the center or at one end.

The bannerston is a more elaborate ceremonial stone than the gorget. It was much harder to make and it is not found often. It resembles some what a double edged hatchet in shape. It was probably made out of a block of selected stone about five by two by one inch. The thickness of of each end was ground down to about a quarter of an inch, leaving a thick section in the center through which a hole was bored with a wooden drill, sand and water. If this operation was successful, the object was then finshed by grinding and polishing.

These objects are found over the whole of the Eastern part of the United States east of the Mississippi valley and eastern Canada. They reach their highest development in the Ohio valley, although some of these implements found in Maryland are equal with those of other localities in point of workmanship.

Richard E. Sterns,
Asst. Curator of Archaeology

OUR FIFTH SEMI-ANNUAL GUEST EVENING.

On November third the fifth Semi-Annual Guest evening was held.

The feature of the evening was a lecture by Mr. Gilbert C. Klingel on Inagua, visited by him on our recent expedition in conjunction with the American Museum of Natural History, New York.

Mr. Klingel divided his lecture into three parts; Inagua, Hatii and Santa Domingo. The lecture was graphically illustrated with maps and lantern slides, showing the many phases of the

life of the natives as well as the animal life of Inagua. Sometime later Mr.Klingel will speak on other portions of the Expedition.

Mr. Wallace Coleman who accompanied Mr. Klingel on the Inaguan lap displayed a number of reed articles made by the natives.

Nine species of insects from Inagua were exhibited. The insects were mounted and prepared by Mr. Eugene R. Polacek.

The Department of Entomology had a fine display of foreign butterflies of the families Eupoeinae, Papilionidae, Morphidae, and Pieridae.

The Department of Archaeology displayed a fine collection of spear heads, arrowheads, bannerstones, pottery and ornaments from Maryland Indians.

A temporary display of Maryland fossils was exhibited by the Department of Geology, representingthe various Maryland deposits. A special feature of the Department was the exhibition of a collection of semi-precious stones loaned for the purpose, by Mr.Elra M. Palmer, Assistant curator of Geology.

The photographic display was entirely Inaguan. Mr. Coleman displayed enlarged photographs of the two species of Inaguan land crabs, andthe only scorpion of the island. Mr. Klingel displayed enlarged photographs of the lizards, Leiocephalus inaguae and Leiocephalus maynardi; a number of the hummingbird Nesophlox lyrura, of the banana bird, the Dominican grebe and the hermit crab.

Over twenty species of Mollusks from Inagua were prepared by the Department of Conchology.

Our fifth Semi-Annual Guest evening was the largest and best in display so far held by the Society.

Every Department head everted every effort to make the exhibition the most interesting in the history of the Society. This was done under the most trying conditions, as the quarters were quite upset owing to the renovating and instalation in progress.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. 11 Baltimore, Maryland - December 1931 No. 4

THE IMPORTANCE OF PURE SCIENCE AND SYSTEMATIC ENTOMOLOGY

During social discourse with persons who have never inquired into the study of pure science, entomology and its adjunct known as systematic entomology, I have often heard the question asked; "Of what use is it that you study habits and life histories of insects, and spend hours in the classification of them under endless Latin names?" Most of these people grant the vast importance of economic entomology, and concede that it is perhaps one of the most vital sciences pursued today, but they apparently see no purpose in the study of insect life merely in reference to the lives, habits, classification and anatomy of insignificant creatures often referred to as "bugs".

The purpose of this article is to give some of the outstanding reasons why these studies are pursued, and their great importance in diffusing scientific knowledge to, those interested in the creatures which share the earth with Man. To begin, the root of all economic entomology lies in the study of what is called the "pure science" of the study. It would be impossible to combat insect pests and counteract the ravages of crop and resource destroying insects if the pure science

entomologist had not in the first place shown the economist the habits and characteristics of the creature to be destroyed. The anatomy of the insect most be known, its peculiarites and weaknesses, in order to successfully combat it in large numbers. The effect of chemical compounds on the structure must be known, and without the knowledge of its anatomy and physiology, the economic entomologist would be at a loss to successfully render the necessary attack on the insect pests. It is true that much of this very work is carried on by the economists, but the origin of the science had its beginning in the entomologist of the past who studied insects for the enlargement of human knowledge of the world's natural sciences. Another phase of utmost importance is the method of attacking insect enemies of Man with the medium of other insects. This mode of combat is comparatively recent in its practice, and is perhaps today one of the strogest weapons which man can wield against the countless hoards of insects which are constsntly waging a war of destruction upon crops, trees and forests. The use of parasitic flies and other insects to destroy other harmful members of their own kind would be unknown if the pure science entomologist had not in the first instance learned the habits of the species, both harmful and harmless, so that in the new method attack, the economist had first to turn to the scientist to derive his fundamental information before he could use his insect allies to an advantage against his foes. Another instance of the importance of the study is the use of natural resources in the insect world itself. We owe the silk, cochineal, honey , shellac, wax and many other useful commodities of today to the efforts of past students of the science of entomology. These are but instaaces of the great importance of the systematic study of insects to Mankind.

In no measure does this article attempt to cast in shadow the great work of our present day economists. It is generally known by every well informed person that those men working in the

field of economic entomology are all highly versed in the pure science of their vocation. It is safe to say that there are no others more highly informed. But the purpose of this article is to show to those who are sceptical of the study of insects as any particular value to the world, the real importance of the work.

As to lenghty Latin names and complicated classification, only a word is necessary here. There must be a working base from which all endeavor must be built. In order to work in the field of insect life, we must have definite names for the objects of our study. The latin names are used, as they are in all creatures, the universal science language, so that the difficulty of various languages may be avoided. The classification is of utmost importance, as it is thenext stone in the base foundation on which the study is to be constructed, and without it, no study, be it mammology, ornithology, or any such work, could be successfully carried on.

In addition to the above mentioned sources of importance attachingithemselves to the science, there is the factor of the enlargement of the scope of intellectual pursuit, and the source of great pleasure to those who seek digression from the sordid commoness of the ordinary interests.

Stansbury Hayden,
Curator Dept. of Entomology.

STAFF MEMBERS VISIT NEW YORK MUSEUM

By special arrangement December 6th was set aside by the American Museum of Natural History for the members of our Staff. Dr. George Sherwood Director of the Museum opened all the laboratories and work rooms of various Departments and appointed Mr. Hassler and McLean to conduct our members through them.

The Museum was opened at 9.00 a.m. The morning was spent, going through the various dearTment laboratories, and work rooms. Notes on various metods of preparation and technique were made by our staff. This was followed by a delightful dinner. The afternoon was consumed by going over the various exhibitions and displays.

It happened to be childrens day at the Museum. Parents and friends of the school children were invited to see the various exhibits constructed and displayed by school children. The interest manifested by the adults was shown by the attendence of 6,222 persons during the four hours the Museum was open to the public.

The following Staff member made the trip;- The President, Mr. E. B. Fladung, Dept. of Geology Curator L.A. Jones, Asst. Curator E. M. Palmer; Dept. of Archaeology, Curator A. Rubenstein, Asst Curator R. E. Sterns, Department of Entomology, E. Masters and E. R. Polacek, Librarian E. Mc Colgan, and E.O. Wegner and A. D. Zachary.

A special vote of thanks was extended to the officials of the American Museum, for the splended opportunity extended to our Society.

LECTURES.

On December eighth Dr. Gardner Lynn, of The Department of Biology of John's Hopkins University delivered a most interesting lecture on poisonous snakes. The subject cavered more than just poisonous snakes .In fact it was on the most important snakes of Maryland.

On December twenty-eighth Mr. W. Wallace Coleman gave an illustrated lecture on the Fungi of Maryland. Mr. Coleman showed some Thirty four colored photograph studies made by himself and Mrs. Coleman. Mr coleman has been making a study of Maryland fungi for the past year.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol 11 Baltimore, Maryland January 1931 No. 5

SOME OF OUR WINTER VISITORS

As the winter generally brings hardship to mammals and birds who spend the season with us I established a feeding shelf outside of my library window. I am so fortunate as to have several oak trees on my place and enough ground to ensure quiet.

My first shelter was made in form of a table, but, owing to light difficulties, I changed it so as to have a slide for my camera at one end and my feeding shelf at the other window of my library.

The animals soon found the provender and began to come without the least constraint. I provided canary hemp, sunflower seed with wheat, cracked corn and bread crumbs. On a branch fastened to the feeder, I affixed a large piece of suet.

Of course the HOUSE SPARROW was the first visiter. These birds were constantly on the ground beneath the feeder, but seemed somewhat timid. At last they overcame their fear and came upon the platform with their usual aggressivness, driving off the other birds who approached. It was sometime before any birds approached owing in all probability to their consciousness of the near presence

of human beings or the camera.

The JUNCO was very timid and came very seldom, which no doubt was due to the open winter.

The WHITEBREASTED NUTHATCH soon proved to be the clown of the party, permitting himself to be photographed, and finally becoming so tame as to come to the feeder when one was sitting beside it.

The Nuthatches took all sorts of attitudes when eating, quite often seeming to enjoy their food most when upside down. Suet, seed or bread were equally enjoyed by "Upside-down Dick," but in common with most of the birds seemed to like sunflower seed the best.

The DOWNEY WOODPECKER came frequently for the suet, and a FLICKER paid the feeder a visit.

The TUFTED TITMOUSE was a very frequent visitor, eating sunflower seed which it would snatch in a nervous manner and with the seed between its claws, sit upon the fastening of the shutter and bang away at it apparently pleased with the noise it was making: It showed a special fondness for peanuts, seizing on one almost as large as its head and flying away with it shell and all. It was difficult to photograph it, owing to the rapid motion of the bird, who was easily alarmed at the first sound of the graphflex shutter.

The CARDINAL was noted around the ground near the feeder, but not upon same, which no doubt was due to the food in my neighbors poultry yard, and the habit of the bird feeding with the chickens.

Another constant visitor was our old friend the GREY SQUIRREL. This rascal seemed to eat everything except suet, and is not much concerned with anyone. Peanuts were provided especially for his delectation, but proved equally so for the Titmouse.

Edward McColgan.

INAGUAN STUDIES

THE OSPREY OF CONCH SHELL POINT

Of the many birds which make Maryland their home, none is more familiar, particularly to those who live in the Chesapeake Bay area, than the Osprey or Fish Hawk. So it was with more than usual pleasure that I found one of the big bulky nests of the birds on Great Inagua Island, B. W. I.

We had been working along the Southern Coast of the Island threading our way through patches of cactii, prickley pear and scrubby grape. The country was very barren and lonely, the only visible being bright eyed Leicocephalus lizards and a few grotesque land crabs. For miles ahead the land stretched away in a level floor shimmering and dancing in the heat waves. On the right through a thin line of thatch palms we could see the sea breaking over a fringing reef.

High over the water I noticed a bird hovering. Suddenly it folded its wings and straight as a plummett dropped into the pale green water of the lagoon. A moment later the bird had risen again and with heavy flaps of its wings was heading up the coast with a fish wriggling in its talons. The Osprey, for such it was disappeared over a line of low trees.

Half an hour later we reached a swamp bordered by dead and decaying trees. Fairly in the center and surrounded by an oozy bog of black mud stood a low dead tree. It was surmounted by a great bulk of a nest. Two Ospreys were pertched on the edge. We plowed our way thru the mud to the base of the tree. The ground was littered with an array of sticks, white excreta and fish bones. The birds flew screaming and calling about us. I climbed to the nest but it was empty save for a partly eaten fish and the dead and dried body of an adult bird lying with wings open. The dead bird had apparently been there for some time as the feathers were partly covered with lime and sticks. Possibly it was the dead mate of one of the birds flying about us.

Near Cape Henry, Va. I once came upon a similar case, two birds, apparently mated, using a nest in which was the remains of a third. Why the dead birds were not pushed out is difficult to say. To venture the opinion that the surviving birds kept bodies

of their mates near for reasons of grief is hardly wise as it is never good policy to translate human attributes into the actions of birds or animals.

We spent half an hour observing and photographing around the nest and watching the two birds. But before us were many miles of country to be worked over and explored so finally we turned our backs and once again headed Eastward.

Gilbert C. Klingel
Curator of Herpetology

TRUSTEES MEETING

The fourth annual meeting of the Board of Trustees was held on January 22nd.

The President appointed the yearly nominating committee to secure candidates to fill the vacancies of three Trustees whose terms expire this March. The following committee was appointed:-
Mr. Gilbert C. Klingel, Chairman, Mr. Edward McColgan and Mr. Herbert C. Moore.

The Society has suffered a loss due to the resignation of Mr. W. Wallace Coleman, Curator of Ornithology, upon his leaving Baltimore to accept a position in Saskatoon. Saskatchewan, Canada. Mr. Coleman has been Curator of this Department since the founding of the Society. Besides his work of the Department Mr. Coleman was making a special study of Maryland Fungi.

The Board accepted Mr. Colemans resignation with regret and appointed him Associate Curator in the Department of Ornithology. The Department will be under the direction of the President until a new Curator can be secured.

Resolutions of sympathy were adopted upon the death of our member Dr. Philip Friese. A copy of the resolutions were sent to his family.

Notes Trustees meeting will be continued in the next Bulletin.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

◆ *BULLETIN* ◆

Vol 11 Baltimore, Maryland, February 1932 NO.6

MARYLAND AS A FOSSIL LOCALITY

Although Maryland is one of the smallest states of the United States in area the student of Paleontology need not go outside its incorporate limits to find fossil material from the very earliest to the most recent.

Maryland contains a remarkably complete sequence of geological formations representing nearly every horizan from the Archian (Archeozoic) to the Pleistocene. Two of the divisions, the Crystalline Rocks and the Triassic, are nearly destitute of organic remains. The others, however, are rich in their faunas and floras. The Carboniferous, Cretaceous, and the Pliocene - Pleistocene, contain an abundance of both animal and plant fossils. The Cambrian, Ordovician, Silurian, Devonian, Eocene and Miocene periods. All certain extensive faunas while few if any plant remains are known.

In Western Maryland near the town of Frostburg, several coal mines in that vicinity expose the Carboniferous to advantage. A few miles to the east, in the Cumberland water-gap the Silurian formations are found.

Several members of the Devonian may be studied in and around the vicinity of Hancock. While the Cambrian and Ordivician may be found

a little west of Hagerstown along Conococheague Creek:
These are the best known localities west of the fall line which practically divides the state. The Cretaceous are found just east of the fall line, constituting the oldest formation of the coastal plain deposits and fossil beds are encountered throughout its entire length from Summit Bridge, Delaware to Washington, D. C. The Eocene also covers a wide belt across the eastern section of the state. The beds near upper Marlboro are mentioned by the United States Geological Survey as the best exposures of the formation in the east. The Miocene deposits of Maryland were mentioned as early as 1669 and the cliffs along the Chesapeake Bay side of Calvert County have long been famous as fossil collecting grounds. The Pliocene - Pleistocene group while covering a fair size area, fossil beds are not abundant, the best known being Cornfield Harbor in Saint Mary's County.

A. Llewellyn Jones,
Curator of Department of Geology

(Note) this is the first of a series of articles on fossils of Maryland and it is intended on subsequent articles to discuss the formations with localities as noted above in detail.

ARISTOTLE, THE FATHER OF NATURAL HISTORY

It is the object of the writer to present short sketches of the makers of Natural History, and it is conceded that beyond the time of Aristotle very little was known of animal and plant life.

We find Aristotle refering to the Ancients; and well he might, for we have indubitable evidence that much of the scientific work of antiquity has been lost. One of the most impor-

tant discoveries pointing in that direction is the now famous papyrus which was found by George Ebers in Egypt in about 1860. This document was a treatise on medicine dating from the fifteenth century B. C.

Although we have these evidences, they show very little of the real knowledge of Natural History and though Aristotle refers to the views of the Ancients, he regards himself in a sense as a pioneer "I found no basis prepared" he says, "no models to copy ... Mine is the first step, and therefore, a small one, though worked out with much thought and hard labor. It must be looked at as a first step and judged with indulgence."

It is generally admittted that Aristotle was a man of vast intellect and that he was one of the greatest philosophers of the ancient world. The enthusiastic appreciation of Cuvier and the critical estimate of Lewes are the best arguments in favor of this great philosopher as the father of what we call today, Natural History.

Aristotle knowledge of animals was extensive. He was particular in his studies of the life histories of animals. He knew that the drone bees developed without previous fertilization of the eggs (by parthenogenesis); that in the squid, the yolk sac of the embryo is carried in the front of the mouth; that some sharks develop within the egg-tube of the mother. He followed the complete development of the chich within the hen's egg and observed the progression of many other animals. In embryology, he anticipated Harvey in the appreciation of the true nature of development as a gradual process of gradual building, and not as the mere expansion of a previously formed germ. He described the tissues in the structure of animals and in a crude manner analyzed the organs into their component parts. It is also known that he made drawings of anatomical figures, but, unfortunately, these have been lost.

But his greatest work was in his philosophical treatment of the structure and development of animals. He believed in a complete gradation from the lowest organism to the highest and that man is the topmost of a long and continuous ascend.

Aristotle was born in Stagira a city on the Thracian peninsula known as Chalcidice in the year 384 B. C. and lived until 322 B. C. His father, Nicomachus, was the court physician and friend of the Macedonian king Amyntos. Aristotle came to Athens in 367 B. C. and became the most distinguished pupil of Plato and later the teacher of Alexander the Great. There were about three hundred works of his composition, most of which have been lost. He wrote on philosophy, metaphisics, psychology, politics, etc., but in the domain of Natural History he attained absolute pre-eminence.

Edmund B. Fladung.

Notes Continued from Last Bulletin

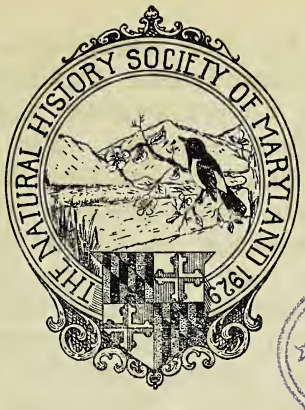
Regrets were extended to Mr. F. Stansbury Haydon Secretary, Curator of Entomology and Editor of the Bulletin, who suffered a broken arm through an accident while riding. Similar regrets were extended to Mr. Elmo Masters also of the Department of Entomology who is at present confined to a hospital in Philadelphia, as the results of an automobile accident on New Year's Day. The Department of Entomology will suffer a setback through these accidents.

Our Bulletin which has been delayed by the above accident to Mr. Haydon will be resumed under the direction of Mr. Elra M. Palmer. With this issue the Bulletin will be to date.

Lecture

On February 16th, the Society had the pleasure of hearing a lecture by Mr. Elra M. Palmer.

The subject of the lecture was the "Evolution of Plant Life." The lecture was one of the most pleasing talks of the season. It was well illustrated with slides and drawings.



◆ *BULLETIN* ◆

Vol II Baltimore, Maryland, March 1932 No. 7

A GENERAL STUDY OF THE ORCHID

Since my first association with ornamental plants grown under glass, I have taken an avid interest in orchids. At first I thought of them as particularly difficult to grow, but as my association with them became more intimate I realized that their cultural requirements are less exacting than many of the older school of florists would have us believe.

As Orchids have become in great demand in America for the cut flower trade, many men are specializing in their culture. Orchid plants are long lived and when once a stock of plants are obtained they flower indefinitely.

At one time it was thought necessary, by many to grow orchids in a specially constructed house. These houses were small and very low under the benches there was always six to eight inches of water to preserve dampness. This method, although it is still satisfactory has been eliminated in many commercial establishments in the United States because many growers desire to keep a variety of plants in the same house. The only difficulty encountered

in this method is the shading. Probably more amateur and professional failures in orchid growing are due to improper light conditions than to any other cause. The weather conditions in the United States during the winter are favorable for orchid culture under glass but the summer is hard on the plants.

There are few diseases which attack the orchid and as these few are generally caused by unfavorable environmental conditions they may be prevented by careful attention to cultivation. The leaf spot is the only recent disease which caused a loss in many establishments. This, however, was checked when the use of sulphur was discovered by Professor Edward A White of Cornell University.

There are three methods of sowing orchid seed. The first is on a substratum not artificially inoculated with a fungus. The second method is in flasks containing a nutritive solution. The third method is in flasks containing peat mixtures inoculated by a fungus. The first method is probably the easiest, so I, therefore, will attempt a brief explanation. Medium sized pots after sterilization are filled with broken crock and charcoal and then topped with live sphagrium moss. This is covered with a sterilized disc of turkish toweling, burlap or some other coarse cloth. After the pot has been saturated with water, the seeds are thinly scattered over the surface. This pot is then set on a bench and is covered with a bell jar and is kept at a temperature of 80°F. The jar is lifted daily for needed spraying. The seeds will be large enough in two months to transplant, if properly attended to.

While there are several species of orchids which are of some commercial value, that known as Cattleya, and Hybrids from it are recognized as being the most useful of all commercial orchids. This is because they give large, showy, flowers in varying shades of color from white, through pink to a tense

crimson purple. There is also an ever increasing number of Hybrids giving flowers of rich yellow and bronze coloring.

Formerly, the Cattleya grown for commercial purposes was the old type imported from South and Central America, but these are rapidly being replaced by our own improved Hybrids.

J. Mitchel Hilpert

STAFF MEETING

A meeting of the Staff was held on March eighteenth. Many important phases of Natural History work of the Society and new ideas were introduced.

Among the many matters discussed the most important were the following:-

Commencing Friday, April 1st, there will be a series of photographic talks to members and all those interested in photography, especially Natural History photography. The subjects are;

April 1, Introductory, Cameras, Lenses, Films, etc. by Alvin D. Zachary.

8, Exposures by A. D. Zachary.

22, Developing by Edmund B. Fladung.

29, Printing and Enlarging by G. C. Klingel.

May 6, Carbon Process, by Ralph Benwitt.

13, Studio, Lighting, etc. Mr. Mettee.

20, Composition and mounting by A. D. Zachary and E. B. Fladung.

That a Junior Department be inaugerated. The work to be conducted by Elra M. Palmer and begun sometime during the month of May.

The years operating budget was discussed as was the coming Annual Photographic Exhibition.

ANNUAL MEETING

The third annual meeting of the Society was held on Tuesday, March 29th.

The President opened with address showing the progress of the Society. This was followed by the Secretaries report. The main point in the report was the increased membership. The Treasurer read the financial report. A copy of the report will be mailed to each member.

The following Departments submitted their reports:- Department of Geology by Curator A. L. Jones, Department of Conchology by Curator, S. Haydon, Department of Herpetology by Curator G. C. Klingel, Department of Ornithology by Curator E. B.Fladung Department of Archaelogy by Curator Albert B. Rubenstein, Library by Edward McColgan, Librarian, Department of Education and Publication by Curator E. B. Fladung.

All of the above reports will be published under the Third Annual Report and a copy will be sent to each member.

The meeting was the largest annual meeting ever held by the Society. The report and statistics showed the rapid progress that has been made in the past year, which undoubtedly was the best experienced by the Society. Following the meeting a smoker was held and refreshments were served.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

◆ BULLETIN ◆

Vol II Baltimore, Maryland April 1932 No. 8

NOTES ON THE FAMILIES OF MARYLAND MOTHS

I: The Sphingidae

Among the larger Heterocera native to the stat of Maryland, there is perhaps no family better represented or more frequently observed than the Sphingidae, the Sphinx or Hawk moths. The family is an immense one, and is distributed in large numbers throughout the various faunal regions of the world. In Maryland, we are extremely fortunate in the fact that there are thirty-five species occurrent in our State, which constitutes 43% of the entire eighty-one species native to the limits of the United State The scientific name given to the family is derived from the fancied sphinx-like position assumed by the larvae when at rest. In this position the head and foremost segements of the caterpillar are drawn back and raised above the posterior segements, and this attitude was said to resemble that of the Egyptian Sphinx, the name of the family being given by early entomologists for this reason.

In size, the members of the family vary to a large degree, there being some species in the tropical regions which are but an inch or more in length of wing spread, and others in the temperate and also exotic fauna which are very large, often measuring five to six inches across the wings. The species found in Maryland are of the large and med-

ium types, with the exception of the genus Haemorrhagia, which contains several smaller types.

The bodies of the moths composing the family are thick, with several types of abdomens. Some are conical, others cylindrical, and some have a marked flattening of the ventral surface. Some species bear thick tufts of hair on the last segement of the abdomen, and these tufts are capable of being spread at the will of the insect. The abdomen in every case extends well behind the hind margin of the lower wings, this being one of the most frequent characteristics of identity employed by the casual observer. The thorax is also quite thick and frequently extends beyond the junction of the wings. The head is generally large, with proportionately sized naked eyes and probocis of extreme length and development. In many cases the probocis is longer than the entire body of the insect. The antennae are large, and heavier in the male sex. They are generally thick at the base, taper to the ends, and are usually hooked at the extremeties, or in some species, curved.

The Sphinx moths bear very small wings in ratio to the size of the body. The primaries are very long and narrow, usually well pointed at the apexes, and are generally straight or rounded as to margins, with the exception of some genera, particularly in the Sub-family Ambulicinae, which bear margins of undulated design. The lower margin of the fore wings is invariably shorter than the costal margin, this being the case in all species. The secondary wings are much smaller than the primaries and seem at first entirely disproportionate. The venation of the wings may be stated as eleven to twelve veins in the fore wings, and eight in the lower pair, with the discal cell small in both.

The members of the family are all capable of powerful flight and are particularly swift on the wing. They are sometimes taken for humming birds when observed at a distance hovering over blossoms. Most of the genera are nocturnal in their habits, though the majority of these fly in the dusk of the evening. Some genera are diurnal and some individual species are both day and night flyers. The sphingidae are all of the nectar sucking type and are seen most frequently darting from blossom to blossom among the nectar bearing flowers.

Jassmine and honeysuckle seem to be favorite sources of food and I have seen them in large numbers hovering about the large sweet scented lily, Lillium regalis.

The larvae of the Sphingidae are usually all large in size, and vary in coloru to a great degree though those occurrent usually bear green in some shade. Most of the species bear diagonal stripes of the sides of the segementsands also a horn on the last segment, though some are lacking in this latter characteristic. The peculiar attitude assumed by the larvae when at rest, causing a derivative for the name of the family has already been mentioned. The larvae are not polygagus in their foodplant, but geed solely on the plant peculiar to each species.

Pupation always takes place on the ground, or in cells in the ground. Some species spin cocoons among fallen leaves, while others dig cells deep in the earth and transform there.

The Family Sphingidae as represented in the United States is divided into five subfamilies, the Acherontiinae, the Ambulicinae, the Sesiinae, the Philanpelinae, and the Cherocampinae.

Stansbury Haydon,
Curator, Dept. of Entomology

NOTES

TRUSTEES MEETING. The annual meeting of the Board of Trustees was held April 15th. Results of the yearly election of Trustees were announced. Mr. E. B. Fladung, Mr. F. S. Haydon and Mr. Elra Palmer were elected.

The following Officers were elected for the coming year:- President, Mr. E. B. Fladung; Vice President, Mr. G. C. Klingel; Secretary, Mr. F. S. Haydon; and Treasurer, Mr. E. McColgan.

Mr. Sidney L. Garman who has served as Trustee for the past three years resigned. A vote of thanks, appreciation and regret was tendered Mr. Garman. Mr. Herbert C. Moore was elected to serve the unexpired term of Mr. Garman.

In recognition of important services rendered the Society, Mr. A. L. Jones, Mr. Edward McColgan, Mr. Elra Palmer and Mr. Albert Rubenstein were elected to First Class Membership in the Society.

GUEST EVENING. The 6th Semi-Annual "Guest Evening" of the Society was held on April 22nd. An illustrated lecture on "Beauty Spots in Maryland" was given by Mr. Karl Pfeiffer, Assistant State Forester.

The Department of Archaeology had an unusually fine exhibition of Alaskan and Esquimaux Indian implements. Also a display of Dominican Pottery. Mr. Albert Rubenstein displayed a special collection of opals.

Nature prints were exhibited by the following:- Mr. John Calder, Spanish Moss and Natural Bridge, Va. Mr. Gilbert C. Klingel, Cotton Tail Rabbit, Box Turtle, and Chipping Sparrow; Mr. Edward McColgan, Downey Woodpecker, Nut Hatch, and English Sparrow; and Mr. E. B . Fladung, Garter Snake, Snapping Turtle, Box Turtle, and Mallard Duck.

Following the lecture, tea was served.

EXHIBIT. An exhibition of Maryland Moths and Butterflies was displayed at the Central Branch of the Enoch Pratt Library from April 25, 1932 to May 12, 1932. The exhibit was under the direction of the Department of Entomology. Unusual interest was displayed by the public and many inquiries were received.

LECTURES. Four special lectures on photography were held during the month. April 1st on cameras, films, lenses and the principals of photography, by A. D. Zachary. April 8th, photographic exposures, by A. D. Zachary. April 22ns, the chemistry of photography and the development of the negative, by E. B. Fladung, and April 29th on the enlargements and contact prints, by G. C. Klingel.

On April 12th Mr. E. B. Fladung delivered a lecture on insects to the class of Biology at the Baltimore City College.

Mr. G. C. Klingel is conducting a series of informal debates on subjects relative phases of work and problems affecting Natural History and our Society. The first of the series was held on April 12th 1932.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol 11 Baltimore, Maryland, May 1932 No 9

SPECIAL REQUEST

The Department of Entomology is making every effort this season to complete as far as possible the study collection of Maryland butterflies. To date nearly two-thirds of the collection is complete and properly arranged. This comprises 61.1% of the local species, according to the checklist tentatively adopted by the curator. This list will be confirmed later in the year with such changes necessitated by the results of research to be done at the Bureau of Taxonomic Investigations, United States National Museum, Washington, during the month of August. We are at present lacking 38.9% of the species native to the state. The majority of these are confined to the Family Hesperiidae, or Skippers. This family has been greatly neglected during the past years, and of the thirty-six species now listed, we have but eleven in the collection. Thus it is to be seen that the majority of material lacking is within this family.

The following statistics will show how the collection stands as regards the various families:

1.	Papilionidae:	1 species lacking.
11.	Ascidae:	2 species lacking.
111.	Danaidae:	Complete.
1V.	Satyridae:	1 species lacking.
V.	Nymphalidae:	3 species lacking.
V1.	Libytheidae:	Complete.
V11.	Riodinidae:	1 species lacking.
		Some doubt as to correct in list)
V111.	Lycaenidae:	5 species lacking.
1X.	Hesperiidae:	25 species lacking.

All members of the Society, whether attached to the staff of Entomology or not, are earnestly urged to do all that is possible to aid in the completion of this important work. Herewith is published a list of the more easily collected material lacking in the colection. Every member of the organization having any of these species in his possession or is able to obtain them, is asked to convey the said material to the Curator either as a gift or loan to the Society. Also the members are asked to co-operate with the Department in doing what collecting that they may find possible, so that we can, without delay , complete the cabinet with a finished collectionof Maryland Rhopalocera. The following material is needed:

Papilio cresphontes	The Giant Swallowtail
Anthocharis midea	The Orange Tip
Zerene caesonia	The Dog Face Sulphur
Enoidia portlandia	----
Polygonia faunus	The Green Comma
Asterocampa clyton	The Mountain Emperor.

All available species of Family Lycaeindae--The Blues, Hairstreaks and Coppers.

All available species of Family Hesperiidae---The skippers.

Stansbury Haydon
Curator,
Dept. of Entomology

As President of this Society, I urge every member to co-operate in the excellent work of Mr. Haydon in building a complete collection of moths and butterflies of Maryland for this Society

We now have two large cabinets to properly house the collection and trust every one will do his utmost to assist Mr. Haydon.

Signed,
Edmund B. Fladung,
President

NOTES

EXHIBIT: The annual exhibit of natural history prints was held at the Maryland institute from May 6th, to May 23rd. This exhibit was larger and better than our last, both in the number of prints as well as exhibitors. The Maryland Institute through the courtesy of Mr. Hans Schuler gave the main lobby for the exhibit. The following member exhibited:
John Calder, 2; W. W. Coleman, 3; Edmund B. Fladung, 7; Gilbert C. Klingel, 23; Edward McColgan, 2; and Alvin Zachary 3; making a total of 41 prints of all phases of natural history, 91% of which were Maryland subjects.

At the weekly assembly of the Society of May 17th, Mr. Albert Rubenstein, curator of Archaelogy, displayed an unusual exhibit of Japanese Sword Hilts.

JUNIOR DIVISION: Another phase of the Society's work was inaugurated on May 21st. The president addressed the Junio members on the value of the Junior members to the Society.

Boys representing City College, University of Maryland, Loyola High School, and the Boy Scouts of America attended. Following the address, the Junior members were shown the various collections, after which, refreshments were served.

LECTURE: The last of a series of photographiclectures was held on May 6th at the home of Mr. Ralph Bonwit. The subject of the talk was Carbo Prints. Mr. Bonwit gave a demonstration of the entire process.

PHOTOGRAPHY: The Society was honored by the Baltimore Sunday Sun's publishing a series of Nature Photographs of Maryland wild life, in the Photograveure section of the May 15th issue of the Baltimore Sunday Sun. An entire page was given to the photographs which were contributed by Gilbert C. Klingel, Edward McColgan, Edmund B. Fladung, and Alvin D. Zachary.

MISCELLANEOUS: The second series of Mr. Gilbert C. Klingel's informal debates on subjects relative to phases and work of Natural History, affecting the Society was held on May 24th.

It is earnestly requested by the editor that all articles, to be published, be typewritten or written legibly.

The Editor

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

◆ *BULLETIN* ◆

Vol 11 Baltimore, Maryland June 1932 No 10

FROG PHOTOGRAPHY

In the pitch darkness of a murky night we moved slowly up the center of a woodland stream. Our flashlights cut thin pencils of light in the blackness as they foccussed here and there on the banks. Ahead and to the right sounded a musical call, resonant and penetrating. Further on sounded another and another until the still night hummed with the noise. As quietly as possible we waded over the moss covered stones and boulders. The flashes darted along the edge of the water, skirted a minature sandbar and finally rested on the author of the din.

Above a still pool, on a pyramid of rocks, squatted a toad. The skin of its chin and throat was distended into brobdinagian proportions all out of reason to the size of the head. Our eardrums attuned to the same pitch as the piercing call vibrated noisily to the din of it. Suddenly the great throat bag collapsed and the creature was

quiet. For a moment or two the throat trembled and once again swelled to fullest extension.

Quietly our cameras were brought into focus, the lens racked back and forth until the subject was in good detail. Holding ourselves rigid we waited until the throat once again swelled out.

With a blinding flash of light and an ear-splitting reverberation we pressed the shutters of our cameras which closed the electrical connections, automatically firing the flash powder sealed in waterproof containers. The noise and sudden light affected the toad not at all for he remained singing as if the explosion was no more than distant thunder. Yet an incautious movement a moment later caused the toad to collapse his throat bubble and make a wild jump for safety.

In very much the manner described have the majority of the interesting and unusual frog and toad pictures in the collections of the Society have been taken. All effort is concentrated in securing photographs which are natural and in which the subject is unaware of the photographer.

Ample justification comes to the photographer for his discomfort when the chemistry of the darkroom brings into visibility the scene of the night before when on a pyramid of rock above a shadowy pool a toad sat calling into the darkness.

Gilbert C. Klingel
Curator,
Dept. of Herpetology

PLINY

Gauis Pinius Secundies, commonly called Pliny the elder, though he was hearlded in the nineteenth century as the greatest naturalist of antiquity, did not materially forward anything to broaden the scope of Natural History; in fact, he uplaced the nature classifcation of Aristotle, by a plan of a highly artificial one, based on the incidental circumstances of the abodes of animals, either in air, water, or on the land. Yet he expended a great deal of labor in accumulating the data of his time, which he read or had read to him upon the subject.

His "Historia Naturalis," is divided into thirty-seven books, which according to his own account, is a compliation from upward of 2000 volumes. Besides plants and animals this work embraces astronomy, geography, and metorology, and in some instances goes beyond what would be included in Natural History. Nevertheless he perserved and collected much matter of value, which no doubt would have been lost, during these turblent times.

Pliny was born 23 A. D. He came to Rome at an early age and had resource to the best teachers of his time. He entered the army and rose in the course of time to the command of a troop of cavalry and finally he was made procurator of Tyria. During the intervals of his military and political duties he wrote about one hundred sixty volumes, mainly dealing with the wars of his time and accumulating all the data available upon the subject of Natural History. Pliny perished in the eruption of Mount Vesuvius which over-whelmed Pompeii and Herculaneun in the year 79 A. D.

Edmund B. Fladung

COBBS ISLAND BIRD EXPEDITION. On June 30th, Gilbert C. Klingel and Edmund B. Fladung returned, after spending ten days on Cobbs Island, Virginia, for the purpose of making studies and photographs of sea birds.

A number of the sea birds of Maryland nest on this Island and it was for this purpose that the expedition was sent out under the leadership of Mr. Klingel. Twelve species of birds was observed, ten of which are native to this state.

Although the work was somewhat curtailed owing to the wash out tide which destroyed over ten thousand nests of gulls, nevertheless over one hundred and twenty-five photographs and a small motion picture reel was made. Much valuable information was secured relative to Skinners and Terns.

JUNIOR MEETING. The second meeting of the Junior division was held on June 23rd. A fine exhibition was arranged by the Junior members consisting of a display of photographs of some Maryland birds, a collection of Maryland minerals, a series of leaves of Maryland trees and an exhibit of Egyptian and Indian antiquities.

An illustrated lecture on the Indian Tribes of Maryland and their impliments was fiven by Richard E. Sterns, Assistant Curator of Archaeology.

Mr. Elra M. Palmer, under whoes direction the Junior Division is conducted, granted an award to Jerome Meusel for his excellent work in Geology.

In September there will be three awards given to the Junior members making the best collection of Natural History objects, for the best article on Maryland Natural History and for the best photograph of some Maryland Natural History subject.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol II. Baltimore, Md. July, 1932 No. 11

The Oyster

The oyster, the luxurious dish of the A ncient Romans, is a genus of lamellibranchita mollusksca of the section with a single adductor muscle. The shell consists of two unequal and somewhat irregularly shaped valves of laminated and coarsely foliated str. cture; the hinge is without tooth or ridge, the valves being held together by a ligament lodged in a little cavity found in each valve. The oyster is among the lowest and simplest of lamellibranchiate mollusca having no power of locomotion. Its food consists of animalcules and minute vegetable particles brought to it by the water, a continual current of which is directed toward the mouth by the action of the gills.

The oyster produces a vast number of young, say about four thousand in one spawning. The eggs are hatched within the shell of the parent and the young swim slowly in a whitish

fluid surrounding the gills this fluid becomes darker and murky when the young are about to be expelled. A young oyster is about one-one hundred twentieth of an inch long and two million can be put in a cubic inch because they pack very closely. These young attach themselves to old shells, stones, etc. in favorable environments and have been known to accumulate so rapidly as to fill up shallow water and form walls effective enough to resist waves and tides.

The oyster has long been consumed in great quantities as a delicious food. Sergiud Orata, an Ancient Roman, formed the first artificial beds in the English Channel. Along our oyster famous Chesapeake Bay the Indians, long before the advent of the white man consumed so many oysters that on some of their village sites nothing but oyster shells several feet in thickness can be found. To-day the oyster has become a great industrial problem. How can the amount consumed be maintained? The government not only has season law protecting the oyster, but employs a group of scientific men who continuously study it from every possible angle.

The oysters of "yesterday" were even more numerous than those of the Recent Period and about seventy species of the fossil have been found. In a section of the St. Marys Cliffs at Cornfield Harbor, Md., there is a two feet layer of sandy clay literally packed with Pleistocene "Ostrea virginica" which differs but very slightly from our Recent oyster.

During the Miocene Period large quantities of "Ostrea carolinensis" existed as shown by a section of Drum Cliff at Jones Wharf, Md., but they by no means dominated the Chesapeake as they did in the Pleistocene and Recent Periods.

When the waters were much farther inland and when Prince George's County was bay bottom, the Eocene "Ostrea compressirostra" made his home there. This oyster is quite flat and not so irregular in shape as compared to that of today. Even in the remote Cretaceous Period we find "Ostrea falcata" with its scalloped valves looking half like an oyster and half like a scallop. Thus we can see that the Maryland oyster belongs back almost half a billion years.

Charles F. Svec
Curator,
Dept. of Conchology

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Notes

The Board of Trustees quarterly meeting was held on July 14, 1932.

Mr. F. Stansbury Rayden, trustee and secretary, resigned, so as to devote all of his time to the Department of Entomology of which he is the Curator. As Mr. Hayden's plans for his Department are rather elaborate, he found it necessary to relinquish the executive work owing to lack of time. Mr. Hayden's resignation was accepted with regrets and a resolution was offered thanking Mr. Hayden for his faithful, generous, and arduous services to the Society. The resolution was engrossed and presented to Mr. Hayden.

A similar resolution was offered to Mr. Garman who resigned some months previous, for similar reasons.

A resolution of sympathy was passed upon the death of Mr. Eric Jones, Honary Member of the Society. The resolution was sent to the parents of Mr. Jones.

The President made the followin staff appointments for the year:

Geology:- A. L. Jones, Curator
Conchology:- Charles Svec, Curator
Entomology:- F. Strnsbury Hayden, Curator
Herpetology:- Gilbert C. Klingel, Curator
Ornithology:- Edmund B. Fladung, Curator
Archaelogy:- Albert B. Rubenstein, Curator
Education and Publication:-
Elra M. Palmer, Curator
Library:- John B. Calder

Mr. Elra M. Palmer was elected Secretary of the society in place of Mr. Hayden.

JUNIOR DIVISION. During the month of July the following trips were conducted for the Junior members:- July 9, for the study of Botany and the collection of plants; July 16, to Calvert Cliffs to study Geology (miocene); July 23, for the study of Entomology and the collecting of insects.

A lecture on the collecting and preserving of insects was given the Juniors by Mr. E. R. Polocek, a member of the Staff of Education and Publication.

In recognition of important services rendered to the Society, Mr. Richard Stearns was elected to First class membership.

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Lecture: On June 7, Mr. Gilbert C. Klingel delivered a lecture on " The Greater Inagua" to the class of Biology at the Baltimore City College.

BULLETIN
Vol. II Baltimore, Md. August, 1932 No. 12

Some Indian Village Sites on the Patapsco River and its Tributaries

Along the banks of the Patapsco River from Elkridge to its mouth and along Deep Run and Stony Run, many village sites once occupied by Indian tribes are to be found.

The first village is near the mouth of the Patapsco on the left bank opposite English Consul, about a quarter of a mile above the Baltimore and Ohio Railroad Bridge. The site, although not a large or important one, is the only site on the river where oyster shells are found. This evidence suggests that this was the only place on the river where oysters were secured for food by Indians. Opposite Phumphries is the location of another village site, but it is of little importance.

One of the largest sites is located on the right bank, north of the Phumpheries Station. The village extended over a large tract of land, traces of it being found for a mile along the river. Every type of relic common to Maryland Indian has been secured

on this site. The gravel bank here and in fact those in all the village sites partly account for their location, for it was here that the Indian found material for his arrow points.

A mile farther up the river on the same side is another site which has produced a fine collection of implements.

On the left bank of Deep Run at its junction with the Patapsco there is a site which is almost obliterated by a modern village.

Another site is located farther up on the same bank which is of considerable interest. The great quantity of chippings found there signifies that this location was a favorable one for making implements. This would suggest that a large number of points could be found here. However, this is not the fact. The scarcity of the objects can easily be explained by the inhabitants of the district. The writer was informed that about forty years ago the grounds were carefully worked by an ancheologist. (Probably J. D. McGuire of Ellicott City).

At Hanover on the right bank of the Run, there is a very large village site. The Author has gathered a large collection from this site. Another collection from this locality is in the possession of the Disney family of Hanover. The Disney collection has been collected through a period of forty years.

There are only two important sites on Stony Run. The one at Stony Run Station; the other at Harmon's Station.

It is not known whether these villages were all inhabited at the same time or whether the Indians roamed from one place to another in search of a more convenient location as to the abundance of material and game. However the great similarity of the tools and other objects, establish without a doubt that they were occupied by the same people.

The type of relics found include arrow and spear points of chipped quartz and rhyolite, grooved axes and celets, bannerstone, gorgets, fragmentary pottery, soapstone, bowls, pestles, mortars, and hammer stones.

Richard E. Stearns,
Assistant Curator,
*Dept. of Archeology

Report on Ant Experiment At Lutherville, Md.

The purpose of this experiment was to determine the distance that the ants in the Lutherville colony carry the material which is found on their hills. To carry on the experiment, it was necessary first to prepare sawdust colored with waterproof dye and then select two hills sufficiently isolated from other hills. The hills selected will be referred to in this report as "Hill No. 1" and "Hill No. 2".

Hill No. 1 was one foot, six inches high; four feet, two inches in diameter; and thirteen feet, three inches in circumference. It was grass covered at the base for six inches on the southwest side and from six to twelve inches on the northwest, north, and northeast sides. Its base was round, its apex slightly off center to the north. The surrounding land was covered with saplings and hush-wood.

Yellow saw-dust was placed around it in a circle, the radius of which ran ten feet from the center of the hill. Brown sawdust was scattered in a circle fifteen feet from the center of the hill.

Hill No. 2 was two feet, seven inches high; twenty-five feet in circumference; and eight feet, two inches in diameter. It was an even cone with grass on the Northeast side and on the Southeast side. A very thick growth of honeysuckle surrounded the hill from ten to fifteen feet to the west and ran well down into the woods on the other sides. There were a

few young trees growing near the hill.

Sawdust was placed in circles similar to those around Hill No. 1. Yellow, and brown sawdust being placed at ten and fifteen feet respectively. A third circle of pink sawdust was placed around this hill at twenty feet.

(The observations on this experiment will be published in the next issue of the Bulletin.)

John B. Calder

Dept. of Geology

Notes

St. Mary's County Expedition;- On August 10th Mr. Elra M. Palmer, Mr. John B. Calder, and Mr. Ben. Calder returned from a two weeks expedition to St. Mary's County. The object of the expedition was to complete the studies on the Miocene formation of Maryland as well as to complete the study collection, which the Department of Geology has been making for the Society. The Expedition was under the leadership of Mr. Palmer, A ssist. Curator of Geology.

Junior Division;- The monthly lecture of the Junior Division was presented by two of their own members, Mr. Jerome A . Meusel and Mr. Charles V. Sevick, The meeting being held on August 25th. Mr. Meusel spoke on the "Minerals of Bare Hills", and Mr. Sevick on the life history of ferns. Both lectures were well illustrated with specimens and drawings.

School Activites;- A moth hunt was conducted for the boys of McDonough school on August 26th. for the purpose of teaching the boys to collect moths by sugaring. A previous attempt had been made on A ugust 19th, but was unsuccessful owing to a sudden storm which [illegible] the boys in the field.

BULLETIN

Vol. III BALTIMORE, MD. SEPTEMBER, 1932 No. I

MOCKINGBIRDS

Although the mockingbird is not the most beautiful bird in North America, it makes up for what it lacks in colorful feathers by an unexcelled voice. Perched on his favorite chimney or limb, he pours forth a melodious song that makes him worthy of being called America's finest songster. No monotonous song has he that is repeated over and over again, but a variety of chucks, whistles, and trills that astounds any one fortunate enough to hear him. I have heard him imitate a cardinal's whistle, a killdeer's piercing cry, and the songs of the robin. His scientific name, fits him admirably.

The mockingbird is a permanent resident and as hard as Old Man Winter tries, he cannot force this feather covered bundle of energy to depart for warmer climes. A piece of suet will always attract him and keep him hanging around the house.

On April 25th,, I found a nest in a thick bush near a neighbor's home. Three young

were in it and they appeared to have hatched about five or six days before. Both adults fed their young at regular intervals. Their coming was always heralded by a chorus of squaks from the fledgings. On May 5th. the young left their nest. From that time on one of the three seemed to have disappeared, and he was never heard of again. The two parents were busy now teaching the young to fly or securing food for them. Whenever I approached one of their young for a photograph, the parents flew around me, emitting harsh "chrips". As soon as the young heard these loud hissing notes, they became still. So still that I could poke my finger at them without their batting an eyelid. On May 23rd, they were able to fly rather well and on the next day they flew away never to return.

"It wasn't until June 10th that I was able to find their second nest. It was situated about four feet from the ground in a honeysuckle bush. The nest is rather loosely made of twigs, grass, moss and twine and the nest proper, that is, the hollow part, measures five to six inches. The eggs are greenish spotted and mottled with brown. On June 11th. three eggs were hatched. When I went to look at the birds, the parents showed their disapproval by swooping at me several times and actually striking my head.

One day I timed their feeding trips to the nest. I found that in two hours they made 45 trips, or an average of 22 per hour. This means a trip every three minutes, so you can see the parents had no idle moments on their hands.

On June 19th. the young left the nest and were followed around by the parents who drove away the enemies who dared to approach the young. The Mochingbird possess a fiery temper and will attack anything. I have seen it drive away people, crows, rock doves,

grackles, dogs, and sparrows many times.

The male and female mockingbird are alike in color, although I noticed that the female was a little slimmer than her mate. They are gray with whitish underparts, and they can be easily identified by white outer tail feathers and white primaries which are very conspicuous in flight. They walk rapidly along the ground and have a curious habit of raising their wings after each step. The young also exhibited this habit as soon as they had left the nest.

Henri Seibert
Dept. of Ornithology
Junior Division

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REPORT ON ANT EXPERIMENT AT LUTHERVILLE, MD.
(Continued from August 1932 Bulletin)

One week after the hills had been selected for the experiment and the sawdust had been scattered, the hills were visited for the purpose of making observations. The past week had been cold and rainy, however, this afternoon was warm and clear, and the ants were swarming over the entire surfaces of the hills. There were more sticks and dried grass on the hills, particularly on the north sides and on top, than had been noticed before. On Hill No. 1, several pieces of brown sawdust and yellow sawdust were found on the west side. No more sawdust was placed around this hill. On Hill No. 2 a few peices of yellow sawdust were found on the west side. No brown or pink sawdust was seen. Bluegreen sawdust was placed at twenty-five feet and purple was placed at thirty feet.

Five days later the hills were visited again and green sawdust was placed around "Hill No. 1" at twenty feet. The observations were similar to those made on the first trip.

A third trip was made nine days later. The afternoon was very warm and the ants had practically deserted the west sides of both hills. Yellow sawdust and brown sawdust was again found on both "Hill No. 1" and " Hill No. 2" . However, none of the other colors was represented on the debris on the hills.

These observations led to the conclusion that the ants will carry material to deposit on their hills at least twelve to seventeen feet.

John B. Calder
Dept. of Geology

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Staff Meeting:- The Semi-Annual meeting of the Staff was held on September the 30th. Of our twenty-three Staff members, fifteen were present. Plans were made for the Fall and Winter seasons for both the Senior as well as the Junior members and activities for the public; various phases of Natural History work now in progress were discussed.

The Bulletin:- With the August issue the bulletin has completed its second volume. An index will be mailed to everyone. This will enable those who desire to have the bulletins bound, to have a completed book of these two volumes which will be over a hundred pages. The Society will have two bound volumes for its Library. Thanks are due to the two Editors, Mr. Hayden and Mr. Palmer.

BULLETIN

Vol. III Baltimore, Md. October 1932 No. 2

The Bottom of the Bay

The most recent activity which has engaged the attention of the Staff of the Natural History Society of Maryland if the exploration of the Bay Bottom and study of the Marine Life of the Chesapeake from the interesting if unusual viewpoint of the diver. The diving equipment employed for this work is relatively simple, quite different from the cumbersome outfits employed by professional divers. It consists merely of a helmet, glass fronted, resting on the shoulders of its own weight and connected to a surface pump by common garden hose. The pump which forces air to the diver is of simple construction, operated by hand and very satisfactory. Obviously such an outfit is not intended for deep sea diving, but it is most practical for the moderate depths of the Chesapeake.

While the staff had long contemplated marine work of this type in the Chesapeake Bay it was not until June of this year that a helmet could be procured.

The first descent was made in the Magothy River in about 12 feet of water. Mr. Zachary made the first trip down disappearing amid a gurgling of bubbles. After a few minutes he returned to the surface enthusiastic.

Our first day of diving opened a new world to us, the possibilities of which we have not as yet thoroughly grasped. The first descent was a bit bewildering and amazing, conditions beneath the surface being so utterly different from those of the upper " atmosphere" . However, after a few dives one comes more or less accustomed to the strange conditions and begins to transfer his interest from his own welfare to the life about him.

A pear shaped comb-jelly, wraith like, but gleaming with lines of iridescent color, was the first sign of life. The " works" were quite visible through the transparent flesh. We saw quite a number of these jellies during our first dive and later in the season they swarmed. Jellyfish from beneath the water and viewed in their own element are interesting in a degree incomprehensible to those who have not viewed them from the angle of the diver. The surprise of the day came when we made a descent near an anchored sloop. A great crowd of slim silvery fishes, (Silversides), surrounded us. They seemed not a bit afraid but curious. They swam and slithered about and presented a splendid spectacle as the light hit their gleaming scales.

Later in the summer we transferred our diving operations to the Bay proper. We found the water clearer and life much more abundant. We spent much time watching the anemones, barnacles, tunicates, etc. growing on submerged fish poles and observing the actions of the Blue Crab. Shortly after, cold weather brought our diving to an end for the season.

We have improved our equipment considerably, enlarging the glass ports so as to give a wider field of vision and are planning to include telephones in the helmets so the diver can give his observations to the surface operator as they occur.

The first summers diving has presented possibilities to us so wide and so different from the usual line of work that we have been doing in Natural History that to a certain extent we are still so bewildered as to hardly know where to start.

The present plan is to concentrate on fishes as much as possible, taking notes on other forms, however. We intend to do a great deal of night diving, attracting fish by means of lights and baits. Our efforts will largely be directed towards studying the habits and actions of such fishes as we come in contact with and in this way we hope to add some interesting knowledge to that already existing on the Life of the Chesapeake.

Gilbert C. Klingel

NOTES

JUNIOR EXHIBIT: October 3rd the society's season opened with and exhibition by the Junior Division. Twenty four displays comprising Indian artifacts, minerals, fossils, amphibians, insects, shells, bird nests and feathers, fungi, ferns, leaves, (mainly the oaks of Maryland) bird and mammal osteoglogy, biological drawings, phoptgraphs of leaves and birds, and paintings of birds.

One hundred and seventy six guests registered. Each guest was furnished with a program of the various exhibits and refreshments were served.

EXHIBIT AT PRATT LIBRARY: The department of Entomology, through its Curator, Mr. F. Stansbury

Hayden, held a special exhibit of exodic butterflies and beetles at the Library for a period of three weeks, commencing October 3rd.

LECTURES AT FOREST PARK HIGH SCHOOL: A series of lectures were delivered on October 10th, 13th, 14, 17, and 18, at the Forest Park High School by Mr. John Calder, Associate Curator of geology.

The lectures were on the Miocene deposits of St. Mary's County, and were delivered to the three home-room classes and to the Boys Opportunity Club of the school.

SENIOR LECTURE SEASON: of the Society opened on October 18th with an illustrated lecture on the "Aborigines of Maryland" by Mr. Richard E. Stearns, Assistant Curator of Archaeology.

TRUSTEE MEETING: The quarterly meeting of the Board of Trustees was held on October 22nd. Many plans were inaugurated and made, some of which will be completed and ready for announcement in the December or January issue of the Bulletin.

JUNIOR MEETING AND LECTURE: The monthly meeting of the Junior Division was held on October 29th. A lecture on birds and their anatomical adaptability was given by Mr. Andrew Goss. The president made the awards for the competitive exhibition photographs and Natural History Articles.

Mr. Jerome Meusel was granted the Award for the best Nature exhibit at the recent Junior exhibition. Mr. Meusel's exhibit consisted of a collection of Maryland minerals and fossils, as well as a display of fungi, but most noteworthy was a series of 36 leaf photo mounts, all of Maryland trees. Mr. George Didusch was awarded hororable mention for his display of the representative orders of insects, his collection of mammals and bird osteology, and his Gastropods of the world.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, Maryland November 1932 No 3

THE SCALLOP

The Scallop is of world-wide distribution and has about two hundred species in its family. Its shell is admirably adopted to protect without overburdening the occupant. The valves are arched and plaited to give the greatest strength with the minimum of weight. The wide hinge is the fulcrum upon which the central adductor muscle acts to shut the two valves at will, and the resilient ligament opens them.

The shell rests upon the right valve, which is arched smooth, and pale compared with its mate.

There is a close interlocking of the margins when the muscle contracts, except for a misfit of the large ear. A notch permits the passage of the byssus, the cord by which the mollusk attaches itself. A glutinous secretion of the byssal gland is extruded from pores, and these threads are manipulated by the finger-like foot to form a rope before they become toughened by their contact with the sea water.

Young scallops are all able to spin this byssus at will. They tether themselves by it to objects on the sea bottom, and cast off their anchor rope when they wish to be free again. Adults, with a few exceptions, abandon the byssus habit. The common scallop (Pecten varius) retain it through life.

No creature that lives in the vasty deep can be prettier than these daintily sculptured, gaily painted shells, full of life and grace of motion, with plumes of weawed sometimes trailing behind them.

The scallop does not crawl or burrow. The foot is dwarfed till it passes easily in and out of the byssal notch. This is the part we eat. It is strange that the inactive oyster has so tough a muscle that we discard it, counting the remainder a delicious morsel. The scallop's hard-worked muscle is a white and tender bite that tastes like lobster meat. We eat it joyously, casting away the soft parts with the shells. The scallop is in season the year around. It is prepared in a multitude of ways. Fried like oysters it is delicious.

The edible scallop in this country is the Pecten irradious. The shells of all large species are used to "scallop" oysters in. They have always served as drinking cups; the flat valves as plates. Fancy articles made of these shells load the shelves of curio stores. It is a pity that such a pretty shell is used to make this trash.

Dead shells are put down as "clutch" in new oyster beds.

One way to catch full-grown scallops is to troll with a fishing line without hooks or bait over ground they are supposed to inhabit. The first scallop whose tentacles are trickled by the line, snaps his valves tight on it, and is pulled up. Take care that in handling him you do not get a severe pinch.

Charles F. Svec
Curator
Dept. of Conchology

Notes

ANNOUNCEMENT OF NEW SPECIES OF LIZARDS has just come to our hands through the August 11, 1932 American Museum Novitates. The article which is entitled "The Reptiles of Great Inaqua Island, British West Indies" is the work of our Curator of Herpetology, Mr. Gilbert C. Klingel in conjunction with Dr. G. Kingsley Noble, Curator of Herpetology of the American Museum of Natural History. Mr. Klingel on the recent expedition to the West Indies for our Society and the great New York Museum was able to add one new genus, two new species, and one new sub-species to the known reptile life of the island. The new genus will be known as Aristelligella. The new species will be known as Aristelligella barbouri and Sphaerodactylus inaquae, and the new sub-species as Ameiva maynardii uniformis.

Awards to Junior Members in connection with the Junior Exhibit were as follows: Photography, Henri Seibert; Articles on Natural History, Charles Sevick, Woodward Burkhart (honerable mention).

JUNIOR MEETING AND LECTURE: The monthly meeting of the Junior Division was held on November 19. Mr. Gilbert C. Klingel gave an illustrated talk on Haitii and San Domingo.

LECTURE TO PHOTOGRAPHIC CLUB OF BALTIMORE was given on November 22 by Mr. Edmund B. Fladung, Curator of Ornithology on Photographing Wild Life. The lecture was illustrated with lantern slides and motion pictures.

THE SEMI-ANNUAL GUEST EVENING of the Society was held on November 15. The feature of the evening was a lecture on the Physiography of Maryland by Professor Vernon Scheid of the Department of Geology of John's Hopkins University.

The Department of Geology had a most complete exhibit of Miocene fossils of the St. Mary's and Choptank formation. In fact, comments have reached us to the effect that this exhibit is probably the finest in the State.

An excellent display of the artifacts of the Indians of the Conowingo region was exhibited by the Department of Archaeology.

Mr. W. Bryant Tyrell of the Department of Ornithology displayed an unusual fine exhibit of water fowl photographs and Edward Gretsky of the Department of Entomology exhibited a beautiful collection of pen and ink drawing of Maryland animal life.

EXHIBIT AT PRATT LIBRARY. Commencing November 7th and continued for a period of three weeks, an exhibit of a series of bird photographs were exhibited by Mr. Henri Seibert, of the Junior Department of Ornithology. Much attention was attracted by the exhibit and many inquiries were received.

EXHIBIT AT STATE NORMAL SCHOOL was opened on November 29. The exhibit was arranged by the Department of Geology featuring the Miocene deposits of Maryland. The exhibit was in connection with the History study of the students.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

VOL-111 Baltimore, Md. December No.4

SPORE PRINTS

Mushrooms demand attention. They seem to possess no end of means for attracting attention to themselves. Their medium of appeal may be color, form of structure, or their unique position of growth, and though some may possess the combination of all three factors, the results remain the same. The observer is besieged with a desire to know more about these parasites of the wood and field.

The proceedure of preparing gross fungi for collections had not yet been perfected to a point where the subject retains any degree of its colorful and structual form as comparable during life. So far, only wax models have approached the desiratum of the sincere mycologist. Unfortunately this method is restricted to those blessed with more than average artistic ability. However, their is another means that is open to those who possess but the normal ability and normal equipment. That is the making

and preservation of spore prints.

Everyone is aware that fungi reproduce themselves by means of spores which are to all extents and purposes seeds of the blossoming plant. Few of us realize that the portion of the mushroom that we commonly see is but the fruiting organ of the plant beneath the surface; and in the making of spore prints it is in the cap (pileus) alone in which we are interested.

The principle of making spore prints is quite simple. The cap removed from the stem is laid with its spore bearing surface downward on a piece of abxorbent paper, combination protected from draft and after spores have fallen the print is made permanent by fixation, labeled and protected by glass.

The detailed procedure is as follows: The stem (stipe) is removed from the cap in such a manner that the portion remaining does not protrude beyond the spore bearing surface. A pin is thrust into the top to provide a hand-hold for future use. It is now placed on the paper which should not be glazed but of an absorbing nature. The color will vary with the species of fungi employed. Black and white sheets will suffice for all practical needs. There is considerable variation in the color of the spores and this fact will go far towards helping you in the identification of your specimens. The more common colors of spore prints are, white, pink, brown, rust, black and lavender. An inverted bowl is placed over the mushroom to prevent drafts distrubing the spores while they are falling Unless this precaution is taken perfect designs are well nigh impossible. After a lapse of about three hours, the bowl and the mushroom are most carefully removed and the paper containing the spores carefully floated in a shallow dish contain-

ing the fixing solution. The fixing solution recommended by the Boston Mycological Society consists of one part sandrac, two parts gum mastic, and two parts Canada balsam dissolved in thirty parts ninety-five percent alcohol. After the paper has absorbed its quota of the solution the print is put aside to dry. The print is now permanent. It is an excellent plan to take this print after being labeled as to species, date, locality and corresponding notebook number, to place it between two pieces of glass of such size as the print suggests and bind together with lantern slide paper or tape. For this purpose I have gotten excellent results by using discarded photographic plates. The old emulsion is easily removed by soaking them in a hot solution of soda water. Another source of material for mounting is the glass scrap box of your local hardware dealer.

It is the very simplicity of spore prints that is so mis-leading. Only when one attempts to make a collection is the difficulty of securing perfect mushrooms realized. You will be surprised at the number of insects, particular beetles, which find the most vile toadstool a vertible feast. Coleopterist would do well to investigate all fungi if they wished to increase their collections.

Another factor is that all fungi are not formed for the convenience of spore print makers. Sooner or later you will find yourself confronted by an array of funnels (Cantharelles), sponges, (Morchella) spheres, (Calvatia), and what not so that you will find a use for every bit of ingenuity you possess, if you would have a fine collectoon of spore prints.

W. W. Coleman, Assoc. Mem.
Saskatoon, Canada

NOTES

LECTURE AT GILMAN COUNTRY SCHOOL was delivered on December 3rd by Gilbert C. Klingel on Inagua. The lecture was illustrated by slides and motion pictures.

The MONTHLY LECTURE of the Society was held on December 15th by Mr. Edmund B. Fladung, Curator of Ornithology, on Wild Life Photography. Mr. Fladung demonstrated through the aid of lantern slides, the various means and methods used by his department and other departments of the Society for photographing the various kind of animal life.

PERMANENT MUSEUM DISPLAY AT THE NEW PRATT LIBRARY By special arrangement with Dr. Wheeler, Librarian of the Enouch Pratt Library, the Society will have a demonstrative exhibit of all the main large branches of Natural History. The work is now in progress and it is hoped that by March 31st, 1933, at least nine of the exhibits will be ready for the public. The exhibit will be on display in the main corridor of the second floor of the new Library, until the third floor is opened, when these and the other exhibits that complete the series are to be placed for a special designated time.

Accompanying these exhibits will be a special case reserved for displays on various phases and special work in Natural History pertaining to Maryland. These exhibits will be changed from time to time. The arrangement is in the hands of a special committee composed of Mr. Klingel and Mr. Elra M. Palmer. The committee is receiving close co-operation with all the Staff Department heads.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, January, 1933 No. 5

MARYLAND AS A FOSSIL LOCALITY
THE CAMBRIAN PERIOD

Since the purpose of this and subsequent articles are to discuss localities in Maryland where fossil deposits are found, the formations which contain only scattered or no fossil remains will be mentioned but not covered in detail.

The rocks of the Archeozoic and Proterozoic Eras; the earliest known sedimentary deposits, are definitely known in Maryland. However, since they are practically destitute of organic remains and no definite locality has been reported in this state, we must turn our attention to the next Era known as the Paleozoic.

The Paleozoic Era is divided into seven major periods, of which the Cambrian is the first. The Cambrian is furthur divided into eight formations. These will be taken up in successive order beginning with the oldest as found in Maryland.

First, the Loudon: made up largely of black slate is found along the Catoctin and Blue Ridge Mountains. No fossils have been discovered in this formation in Maryland. The conditions of sedimentation apparently being unfavorable to the preservation of organic remains.

Second, the Weverton Sandstone: consists of massive beds of white and purple sandstone, which overlies the older Loudon Formation. These sandstones are best exposed near Weverton, Maryland. This strata is the most resistive to weathering of all sandstone of Cambrian deposits. Elk Ridge South Mountain and Catoctin Mountain owe their elevation to the fact that this strata caps their crests. No fossils have been found in the Weverton for the same reason as given in the Loudon.

Third, the Harpers Shales: overlying the Weverton Sandstone are the Harpers Shales consisting of bluish gray slates and shales, and some sandstone. Although there is no complete exposure of this formation in Maryland, there is one member which is fossiliferous. A good exposure of this member known as the Montalto Sandstone is found in the Railroad Cut of the Western Maryland R.R near Pen-Mar, where casts of worm burrows (Scolithus linearis) are found.

Fourth, the Antietam Sandstone: a course grained white and bluish sandstone. The Antietam like the Harpers has no continuous beds in Maryland, but several outcrops have yielded fossils. In the vicinity of Eakles Mills, Md. remains of trilobites, gastropods, and brachiopods have been found.

Fifth, the Tomstown Limestone: a white to pink shaly marble and dolomite. No fossils have been found in the Tomstown

Sixth, the Waynesboro: composed mostly of reddish to purple calcareous sandstone and shale. This formation is unfossiliferous in Maryland except for ripple marks and mud cracks which are well displayed on weathered surfaces in the vicinity of Smithsburg.

Seventh, the Elbrook Formation: a series of light blue and gray limestone which weathers quickly after exposure, so natural outcrops are rare. A few fossils have been found near the base of this formation.

Eighth, the Conococheague Limestone: a massive dark blue, closely banded limestone. In the basal 15 or 20 feet of this formation are found the remains of the earliest fossil plants: an algae known as Cryptozoon proliferum and Cryptozoon undulatum. A reef composed entirely of Cryptozoon proliferum is well exposed in the Railroad Cut of the Norfolk & Western R.R. Southwest of Antietam Station.

Other Cambrian strata are found in the Appalachians both North and South of Maryland, some of which contain well preserved fossils, but, as these are out of our field a more complete discussion will be made later.

A. Llewellyn Jones
Curator
Dept. of Geology.

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Editor's Note.

The Editor wishes to apologize for being so late in publishing the Bulletins.

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NOTES

DEMONSTRATION:--On January 10th, commenced a series of monthly demonstrations on the preparation of the various kinds of nature subjects for the Museum display and collections. The first of the series was given by Mr. W. Bryant Tyrell, Assistant Curator of Ornithology, on the skinning of birds and mammals

LECTURE AT TROOP 178 B.S.A:- An illustrated lecture was given by Mr. E.B. Fladung on photographing of Wild Life to the scouts and officials of troop 178, on January 13th.

TRUSTEES MEETING:- The quarterly meeting of the Board of Trustees was held on January 14th. The President appointed the nominating committee, composed of Mr. G. C. Klingel Mr. E.M. Palmer and Mr. H.C. Moore, to nominate two candidates for the vacancies of two Trustees who's terms empire on February 28th.

Also a Budget Committee was appointed, composed of Mr. E. McColgan, Mr. E.M.Palmer and Mr. E.B. Fladung to draw up the Budget for our next fiscal year commencing March 1.

MONTHLY LECTURE:- The monthly lecture of the Society was held on January 24. Dr. J. Elvers of Johns Hopkins Hospital spoke on the "Ceremonials and Psychology of the American Indian." Dr. Elvers in his talk, covered the American Indian from Florida to Alaska and the Indians from the West. The lecture was illustrated with slides.

JUNIOR MEETING & LECTURE:- At the monthly meeting of the Junior Division, there were two talks given. One by Woodward Burkhart on "Tropical Fish" and the other by Ned Crosby on "A Brief Outline on Minerology, With methods of Identification."

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, February, 1933 No. 6

Some Maryland Sparrows

Unfortunately when the term "Sparrow" is mentioned, most people's minds refer back to the house sparrow, whose habits and unwelcome presence tends to disgrace his near relatives. However, all other sparrows are without an exception, some of man's most desirable and amicable friends. No two sparrows have the same habits, songs, or characteristics. However, their plumage are so dull and similar, that identification is rather difficult. It is the aim of this article to help in distinguishing the various species.

Song Sparrows:-

The song aparrow, with the exception of the house sparrow is perhaps the most abundant of all sparrows. It is to be found practically everywhere at any time. Its best field mark is its streaked breast which has a large spot in the center. It keeps to the thickets and shrubs of fields and gardens. It is always full of pep, and will always sing its cheerful song which has been described as a "voluble and uninterrupted but short refrain"

Length 6.00

Field Sparrow:-

The brightly colored back, rufous crown and red bill are enough to identify this bird. It is abundant in any stubble field, and it is often found on the edges of woodlands. Its call is a "chip" while its song "being an unusually clear and plaintive whistle" has been written as "cher-wee-cher-wee-cher-wee, chee-o dee-e-e-e-e." It is also found in winter.

Length 5.68

Chipping Sparrow:-

Chestnut crown, black forehead, black line through eye, black bill and spotless breast are good identification marks. No introduction is needed here, for chippies sociability has won the affection of man, and his monotonous "chippy-chippy-chippy" is heard all around the house. He is the most common in the summer because most of them leave in the winter.

Length 5.37

Henry Seibert
Dept. of Ornithology

-ooOOoo-

Ginger

Amomum Zingiber, commonly known as Ginger is a plant that despite the fact that most of us use it almost daily, few of us know what it is.

As a rule, spices grow above ground, but ginger is an exception, it being the rhizones of zingiber. Zingiber is a perennial reed-like plant, similar in appearance to our Iris. Each of the underground roots throw out two ariel stems, which in turn grow to a height of three or four feet. This first shoot thrown up bears the leaves and the second or shorter stem, the flowers which blossom in August or September. At this time the ground will be

covered by the spread of the leaves which wither and fade at the close of the year, when the rhizone is in a ripe state and ready for harvesting. The rhizone sometimes grows to a great size; often a single root will weigh one pound. It is a great improviser of the land and the same ground should not be used more than two consecutive years. The yield is about four thousand pounds to the acre, each plant producing about eight tubers, and eight to ten times more in weight than the amount planted.

J. Mitchel Hilpert.

Notes

EXHIBIT AT THE NEW ENOCH PRATT LIBRARY ON THE OCCASION OF ITS OPENING ON FEBRUARY 4th, 1933

Although we were not ready for the permanent exhibits for the new Pratt Library, Mr. Wheeler and the Library Officials thought it would be desirable that we would have exhibits for the opening, pending the opening of the 3rd. floor where our permanent exhibits are to be placed.

The exhibit committee composed of Mr. E. B. Fladung, Mr. G. C. Klingel and Mr. E.M. Palmer with the valuable aid of our various department Curators arranged six displays consisting of some attractive minerals as well as some well known minerals of Maryland; Fossils of the Miocene formation of the Calvert Cliff; Implements and Pottery of the Maryland Indian; Brightly colored shells from the various parts of the earth; unusual butterflies and beetles of the tropics; and some well known birds and eggs. Accompanying the exhibits are photographs to give the observer an idea of the scope of our work. These exhibits are on the second floor.

EXHIBIT AT FOREST PARK HIGH SCHOOL:- In conjunction with the 50th anniversary of the

school the department of Geology arranged an exhibit of Miocene Fossils for a period of three weeks on display commencing Feb. 5th.

DEMONSTRATION AT THE SOCIETY:- The second of the series of demonstrations was held on Feb. 7th by Mr. W. B. Tyrell. The work of the evening was the mounting of birds.

LECTURE AT FOREST PARK HIGH SCHOOL:- On Feb. 8th, Mr. E.B. Fladung delivered a lecture to the Camera Club and Biology Club of this school, the subject being Nature Photography.

EXHIBITS AT TROOP 178:- On February 10th at St. Antony's Church, an exhibit of Nature Photographs was held at the quarters of the troop, for the benefit of the parents and the Ladies Society of the Church.

RESOLUTION ON THE DEATH OF MR. MICHEL HILPERT: A resolution on the death of Mr. Michel Hilpert, father of our esteemed member Mr. Mitchel Hilpert was passed by a special meeting of the Excutive Committee on February 18th. The Resolution was ordered to be engrossed and presented to Mr. Hilpert and spread upon the minutes of the Society.

JUNIOR MEETING:- As the demonstrations conducted by Mr. W.B.Tyrell were so well received by the members, it was thought advisable to have the same demonstrations for our Junior members. The first one on the skinning of birds was given by Mr. Tyrell on Feb. 25, at the monthly meeting of the Junior Division.

MONTHLY LECTURE:- The monthly lecture of the Society was held on Feb. 28th. Dr. E.A. Andrews of Johns Hopkins University spoke on the famous ant hills of Lutherville. The lecture which was finely illustrated, was very well received.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, March, 1933 No. 7

TURKEY VULTURES

There were more than a hundred buzzards circling above us. This clear cold mid-afternoon of a winter day, they were lazily circling about, some barely skimming the tree-tops, others so high that they were mere specks against the bright sky.

They seemed to move in several distinct groups and their intermingling circles made a kaleidoscopic pattern as we watched them through the bare branches of the trees.

What had attracted so many of these birds? Was there a dead animal nearby? We were on the hills of the Patapsco Forest, near Baltimore, and as we continued our explorations, we came to a large black-oak tree with its upper limbs whitened with excreta, while on the somber floor of the forest beneath there was a whitish ring of the same material. This, then, was the Buzzards Roost, which explained why so many birds were flying above us.

Here was an opportunity for some interesting observations. We marked the location carefully, selected the most advantageous sppproach to the tree, and moved on to other parts of the forest until about four o'clock

when we returned to the tree. It would be dark by five and we wanted to watch the great birds as they came to roost.

Already thirty or forty had settled upon the chosen big oak and a few others were scattered about in neighboring trees.

We approached as quietly as the dry leaves under foot would allow, but we were still some distance away when a branch crackled under foot. With a swish of heavy wings beating the air and the dull thud of feathers striking branches, nearly all the birds hurriedly left, only to circle in front of us above the tangled branches.

We sat down at the base of an old tree and made ourselves as comfortable as possible to await the return of the buzzards. Near us a few green fronds of the Christmas Fern lay on the dead leaves. In front of us, beyond the forest, the greenish water of the stream reflected the somber hills and sky, and on the opposite side of the valley, silhouetted black against the waning light were many buzzards roosting in the bare branches of the trees that covered a high bluff.

(To be continued in April Bulletin)

W. Bryant Tyrell
Asst. Curator
Dept. of Ornithology

Maryland Butterfly Collection

The Department of Entomology is pleased to be able to report to the members of the Society that recently the long process of bringing the collection of Maryland butterflies towards completion has been practically accomplished. With the acquisition of the new cabinet frame to hold the drawer cases, the collection is accessable to the members of the Society. While it is true that we still lack a number of species, the majority of these are confined to one family, the Hesperiidae or Skippers, and this fault will be rectified

during the coming collecting season. However, the collection is representatively complete, and contains some fine series of specimens, some of which are unusually excellent. The task of arranging this material so that it may be viewed by the members of the Society to advantage has occupied a great deal of time and effort of the part of the Department staff. We wish to state here that the collection is now officially "open" to the members, to inspect as they may wish, and it is our hope that they may derive pleasure and information from this important part of the Society's ever increasing collections of natural history specimens.

Stansbury Haydon
Curator
Dept. of Entomology.

NOTES

STAFF MEETING:- The Spring meeting of the staff was held on March 3rd. All Departments were represented to discuss and inaugurate plans for the work of the Spring and Summer months.

DEMONSTRATION:- On March 14th, the monthly demonstration was given by Mr. W. P. Tyrell on the casting of reptiles and amphibians.

LECTURE AT GILMAN SCHOOL:- A lecture on Natural History adventures was given to the Junior students of the Gilman Country School, on March 30th by Mr. E.B. Fladung.

EXHIBITION:- An Archaelogical display of Maryland Indian artifacts and impliments were exhibited at the State Normal School from March 17th to 31st. The exhibit was arranged in conjunction with the study of the history of the American Indian.

JUNIOR MEETING:- The monthly meeting of the Junior Division was held on March 25th. Mr. Carrol Wagner gave a demonstration of the preparation of misaropic slides for the study of Histology.

ANNUAL MEETING:- The Fourth Annual meeting of the Society was held on March 28th. The President made an address showing the rapid progress of the Society during the past four years. The Secretary in his report announced the election of Mr. John Calder and Mr. A. Llewellyn Jones as Trustees for the period of four years. The Treasurer, besides the financial report for the year, read the budget for the coming year. Reports were read by the following:- Department of Geology, A.L. Jones; Department of Conchology, C. Svec; Department of Entomology, F.S.Haydon; Dept. Herpetology G.C.Klingel; Dept. Ornithology, E.B. Fladung Dept. Archaeology, A.R. Rubenstien; Library, John B. Calder, and Dept. Education and Publication, E. H. Palmer. The Departments of Herpetology and Ornithology read their programs for the coming year. Following the meeting, tea was served.

An Ornithological Need

For want of a suitable caninet for our growing collection of bird skins, this valuable work will have to be discontinued, unless some generous member or friend comes to our aid.

Our collections are well housed and are all well represented with the exception of the housing of the birds.

It is no use whatever of securing birds unless we can take care of them properly. We are loath to kill just for the sake of killing, but an organization such as ours should have a representative scientific collection of birds.

We trust some generous person will come to our aid.

Edmund B. Fladung,
Curator of Ornithology.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, April, 1933 No. 8

Eocene of Aquia Creek, Va.

Some time ago, I was fortunate enough to accompany Mr. Benn of the National Museum on a collecting trip to Aquia Creek, in Virginia, where there is an exposure of Eocene Fossils. It is on a tract of land owned by Mr. E. B. McLean, the Washington publisher, and his permission must be obtained before a visit can be made. The farm is about an eighty mile trip from Baltimore by way of Washington, and the last ten miles are through a maze of very bad dirt roads, which with the local directions being very indefinite, makes the farm a hard place to find, however, once on the location a very fruitful day can be spent collecting fossils of the Aquia formation.

The cliffs in which the fossils are exposed, rise for over one hundred feet from a narrow sandy beach, and are composed of greensand, greensand marl, and glauconitic limestone ledges. One of these ledges, Zone 9, a thick bed some sixty feet above the shore lines is particularly interesting because it is composed almost entirely of "Turritella mortoni." This fossil is present through out

the exposure and seems to have been the common mollusk. In the other beds, closer to the beach and composed of softer material, the fossil remains are more diversified, and a good representative collection of Eocene fossils can be made.

In these lower beds, the calcarerous material of the shells is not commonly found in tact, but very fine casts remain. Nevertheless, casts retaining all or most of the calcarerous material can be found, but as they are very soft, great care must be taken to prevent their being damaged. Fossil remains other than mollusks are few and consist principally of sharks teeth and an occasional fragment of bone.

According to the Maryland Geological Survey, the cliffs extending from Aquia Creek to Mathias Point are the best exposures of the Eocene on the Middle Atlantic Slope. On the Maryland side of the Potomac River, there are good sections at Piscataway and Mattawoman Creeks, Upper Marlboro, and along some of the western branches of the Patuxent River. There are other exposures, but generally they are thin sections and the fossils are either rare or entirely lacking.

Roger S. Hecklinger,
Associate,
Dept. of Geology.

Turkey Vultures
(Continued from March Bulletin)

As we sat there, the great birds would sail noiselessly over, sometimes their small baked red heads gleamed in the last rays of the sun, their dark, silver-lined wings moving only to catch movements of the air currents as they glided by. They soon began to come back, some alighting gracefully, for buzzards; while others came awkwardly to rest on the swaying branches, using their broad wings to steady their ungainly bodies. Some

after alighting , would shake themselves until every feather was ruffled, giving them a most unkempt appearance. Others would alight on a branch, where one or more were already roosting and the impact of the landing would throw them off their balance and result in many awkward and ludicrous balancing movements of body and wing. Often they would sit and preen; and some were always watching the movements of the neighborhood, cocking their heads first to one side and then the other to see each newcomer. A few seemed to be resting, oblivious of what was going on around them, and would sit with their heads resting on their bodies.

Quiet reigned as dusk deepened into darkness, with only an occasional bird coming to rest---147 birds were in the trees in front of us. Only the restful babbling of water running over stones and the slight rustling of the dead leaves still on the trees disturbed the peacefulness of the forest. By 5:PM it was quite dark and we left our concealment as quietly as possible, retraced our steps and were soon back on the road and headed towards home. We hope to be able to return in the spring, find a buzzard nest or two, erect a blind and secure a series of photographs of the brooding female and the growing young.

W. Bryant Tyrell.

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Notes

MEETING OF DEPT. OF GEOLOGY:- A Staff meeting of the Department of Geology was held on April 7th. A program of field work was adopted and assignments were made to its various members.

DEMONSTRATION:- This months demonstration was held on April 11th. Mr. Flingel Curator of

of Herpetology, demonstrated the methods used by his department in preparing study specimens.

TRUSTEES MEETING:- The Annual Meeting of the Board of Trustees was held on April 20th. Besides the usual business, the Officers for the ensueing year were elected. President, E. B. Fladung; Vice-President, G. C. Klingel; Secretary, E. L. Palmer, and Treasurer, E. McColgan. The President appointed the following committees: Executive, G.C. Klingel, Chairman, E. Palmer and E. McColgan: Finance Committee, E. McColgan, Chairman, J.B. Calder, G.C. Klingel; Membership Committee, E. L. Palmer, Chairman E. C. Moore and A. L. Jones. The President is ex officio member of all committees.

SEMI-ANNUAL GUEST EVENING:- On April 25th, was held our eight Semi Annual Guest Evening. A Lecture on the "Conservation of our Wild Life" was given by Mr. E. Lee LeCompte, the State Game Warden. The Department of Ornithology held a very fine display of mounted birds and mammals as well as a part of the skin collection that the department is amassing. The Department of Herpetology exhibited its complete diving apparatus to be used in the coming seasons work. Besides these displays, there was an exhibition of bird and mammal photographs by E. B. Fladung, E. McColgan and W. B. Tyrell.

LADIES NIGHT:- April 28th was our first Ladies Night. Wives, Mothers and the Lady Friends of our members were the guests of the Society. The feature of the evening was an illustrated lecture on Inagua, by Mr. Gilbert C. Klingel. After the lecture our Lady guests were shown our various collections and tea was served in English fashion.

Junior Meeting:- The monthly Junior Meeting was held on April 24th. Mr. E.B. Fladung gave a lecture on Wild Life Photography.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, May, 1933 No. 9

The Queen Snake - Natrix leberis (Cope)

This snake is also known as the moon snake and leather snake in different localities. It may be roughly described as follows. A slender serpent whose head is not very distinct from the body, dark chocolate brown colour above and having a stripe on either side on the first and second rows of scales. These stripes are not unlike cream in colour and begin at the upper labials running the entire length of the body. Closer examination will disclose three other stripes of blackish hue also running the entire length of the body. These are indistinct. The abdomen is yellowish and gives an effect of being striped with two brownish lines. The scales are roughly keeled.

During two years of observation and collection on the Patapsco State Forest, I

have noticed what I shall call a peculiarity of this serpent. There are many streams [illegible] species of serpents are found, but, this species appears to be restricted to a small area.

The area I refer to is located at Glen Artney, along the banks of Bull Run, from where the run meets the Patapsco River, thence upstream a distance not exceeding that of a half a city block. Observations show one may find this serpent laying in the branches overhanging the run from the latter of March to early in October. Just why all the other nearby streams are uninhabited by the Queen Snake I cannot explain, inasmuch that conditions appear much the same. They make interesting pets, however I have had little success with them in captivity.

Harry C. Robertson
Dept. of Herpetology.

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Agrostology

Which is the term employed to define the study of grasses, represents a splendid field of study and collecting which is open to all who desire to explore and cultivate a knowledge of one of the most interesting branches of natural history.

A remark such as "Just grass" does not only reveal a lack of information on the subject, but is also a confession of the speakers ignorance of the romance that may be found. Few of us realize the significant place grasses occupy in relation to the other branches of botany. It is estimated to represent about one sixth of all vegetable life,

and in its distribution it is practically unlimited. Meadow, mountain, swamp and desert all have their particular species. The enthusiast can begin in his back yard and go as far as his purse and opportunities will permit.

There are more than four hundred genera and four thousand species that await his attention. Such a statement may discourage some, but to others it will prove an incenitive to learn how many of this formniable number can be found in their own community, county, or as we prefer all our collections to represent, the State of Maryland.

When one considers the advantages of a study confined to this group of plants it is difficult to understand why it is so neglected.

First there is the supply of material, in Maryland, because of its geographical location and diverse topography, one immediately realizes that a state collection will include a great many more specimens than other divisions of the Union which do not enjoy such advantages, The next important consideration is the preparations of specimens, here again one easily recognizes the lack of difficulties. Compared to other botanical specimens their water content is very low and for preservation the simpliest sort of apparatus will suffice, a pile of old newspapers and a few heavy books will provide a press to meet requirements. Nor does mounting the specimens for display involve difficulties, there are two methods to choose from. Mounting on bristol board in the usual fashion or the use of the more elaborate Riker mounts, whose size would permit the addition of photographs illustrating stands and habitat of the species

and possible photomicographs of the smaller structurers.

(To be continued next month)

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Notes

LECTURE:- The last lecture of the season was on May 23rd by Harry C. Robertson of the Dept- of Herpetology. Mr. Robertson spoke on the observations of Maryland Reptiles. The lecture was illustrated with live and prepared specimens.

EXHIBIT:- A display of the diving equipment our new department of Marine Research was exhibited at the Pratt Library from May 15 to 29 inclusive. This exhibition attracted an unusual interest and many inquiries were received at the Society in relation to this branch of our work.

JUNIOR MEETING:- The monthly meeting of the Junior Division was held on May 27th. Mr. F. Stansbury Haydon gave a lecture on the self preservation of insects.

THE PAPILIONIDAE OF MARYLAND

A new publication of the Department of Entomology, which has just been issued. The proceed which was written by Curator F. Stansbury Haydon gives the life histories of the butterflies of this family in Maryland. If you did not receive a copy, please notify us.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, June 1933 No. 10

AGROSTOLOGY

(Continued from May Issue)

If you were to ask the average person to name five grasses they would probably declare they were not equal to the task. As a matter of fact, they could name the required number and five more without difficulty. Wheat, barley, rye, buckwheat, and corn are all true grasses. If you were to tell them you had seen grass growing one hundred and fifty feet high, they would scoff at the idea, yet bamboo is a true grass. And in comparison to the giant grass you have those of the Alpine heights where a specimen of three inches tall is reckoned as a big find.

However, it is the wild grasses growing in your own State that command your greatest attention. As an example let us take timothy (phleum pratense) the most important of all the hay grasses, it is represented in the U.S.

by four different species, one mountain timothy already native and the others introduced.

Timothy was first known in the Northern States where its cultivation was begun as "herd" grass because it was imported from the old world by a New Englander of that name. Later records indicate that a "Timothy" Hansen brought some of this grass seed to Maryland and began its cultivation in the South. This was before 1750 and it has been known as timothy ever since. Such is the romance of grass and we have not mentioned the biological proceedures which are even more fascinating. Just "grass' deserves your attention.

Note. The State of Maryland should yield at least one hundred different species.

W. Wallace Colemen.

GALEN

In these short sketches of the fathers of Natural History we must include Galen, although from a modern point of view, Galen would not necessarily be called a naturalist, but rather an anatomist. He was original and used, as a whole, the right methods in arriving at facts. He erred, however, in using the lower animals for dissection to prove his theories relating to the human anatomy.

Huxley has this to say of him. "No man can read Galen's works without being impressed with the marvelous extent and diversity of his knowledge, and his clear grasp of those experimental methods by which alone physiology can be advanced."

His researches with the lower animals must have given him at least a clear insight in

their structure, which is important today in the identification of many species.

Galen or Claudius Galenus was a Greek physician, born 131 A. D. in Perganus, Mysia. He studied medicine in Corinth and Alexandria, returning to his native city in 158 A.D., where he was appointed physician to the school of gladiators. He went to Rome six years later where he established a wide reputation and four years later he returned again to his native city. Later he was summoned to Rome by the Emperors Marcus Aurelius and Verus where he served for some time, but how long is not known. At about the end of the 2nd century he was employed by the Emperor Servus. He died in the year 201 A.D. in Sicily.

He was a voluminous writer and there are 83 treatises of his extant today which are supposed to be genuine, the most important of which are those treating on anatomy. These became the unfailing authority up to and including the Middle Ages.

Edmund B. Fladung.

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NOTES

LECTURE. On June 3rd, Mr. Gilbert C. Klingel of the Department of Marine Research delivered an illustrated lecture on the Greater Inagua to the Young Peoples Society of St. Johns Episcopal Church.

JUNIOR MEETING. The monthly meeting of the Junior Division was held on June 30th. The meeting was devoted to the reading of notes on various observations made during the past

month by the Juniors. Ned Crosby gave a talk on the identification of minerals by fluoresence through the medium of the argon lamp.

ARCHAELOGICAL TRIP. On June 12th, Mr. Richard E. Stearns, Assistant Curator of the Department left the Magothy River on his cat-boat the "Coot" bound for the Choptank River for the purpose of locating Indian Village sites. Owing to south winds, however, he was compelled to enter the Chester River. They lay here for some time, a northwester preventing them from making much progress. Afterwards they proceeded up the Chester River (although not their original intention) as far as Corsica Creek at Middle Quarter Cove, where there was a shell field. There were many shells, but a few chips of jasper and quartz only, some broken pottery and a hammerstone were found.

The locality which might be successfully worked in the fall after the crops have been harvested seems a good place to find artifacts, according to Mr. Stearns.

At Queenstown another shell field was located, but at present it is too much overgrown to be worked. In 1932, the bank at the foot of a long wharf had been cut away, exposing a burial pit from which a skeleton was taken at this locality, which is now in the possession of Dr. Price. A large piece of a clay vessel with a geometric pattern which was impressed with cord before the clay was fired, was collected.

At Love Point on Kent Island, the final field locality before returning, half a gorget of mottled gray slate broken in three pieces by the plow was found.

The trip extended over a period of seven days.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, July 1933 No. 11

SPORE DISPERSAL

Spores, like the seeds, vary in their methods of dispersal. The fungi and algae that form spores depend on the wind and water for dispersal. Most of the moss plants shed spores by means of the teeth at the mouth of the capsule. The ferns shoot off their spores.

To observe the spore dispersal action of the ferns one needs a microscope, a glass slide, and water. A fern sporangium may be obtained by taking a fertile frond and removing the sporangium with a teasing needle. If a single spore case is placed on the glass slide and a drop of water is placed on it you may examine it very easily, prior to the exposing. On close examination of a typical spore case, Leather woodfern (Thelypteris marginallis) an annulus or ring of surrounding cells will be found. The place where they are the thinnest is called the lip.

Fan gently, so as to hasten the evaporation. As the water passes off, the sporangium will be seen to split at the lip and slowly draw back.

A few spores may fall out at this point, but these are stray ones. The upper part of the spore case is drawn back as though by an irresistible force. Suddenly it is released and as it flies back to its normal place, the spores are shot out like cannon balls.

The explanation of this action is simple. When you place the sporangium in the water the annulus took in water which, when evaporated, caused the annulus cells to contract, pulling the lip open and setting free the upper half of the case which is pulled back. The annulus contracts to a certain point and then releases the half of the case; this action is similar to that of a stretched rubber band that is suddenly released. The force thus exerted sends the spores flying in all directions.

Earl H. Palmer
Department of Botany.

NOTES

EXHIBIT. July 3rd completed a two week mineral exhibit at the Central Branch of the Enoch Pratt Library by Ned Crosby, one of our Junior members. The exhibit caused a good bit of favorable comment in our local newspapers.

MARINE RESEARCH TRIP TO FLORIDA. Mr. Gilbert C. Klingel, Curator of the Department of Marine Research and Harry M. Zachory, Assistant Curator, returned from a ten day trip to Florida on July 15. The purpose of the trip was to study marine life and methods of marine photography as well as various used of the diving equipment preparatory to their work in the Chesapeake Bay.

TRUSTEES MEETING. The quarterly meeting of the Board of Trustees was held on July 20th. Owing to the growth of the Society and the progress that has been made in the various branches of the work undertaken by our De-

partments it was thought advisable to inaugurate a Department of Marine Research and a Department of Botany. The Department of Conchology is incorporated in the Department of Marine Research. Also, the Department of Geology was split into a Department of Minerology and a Department of Paleontology; likewise the Department of Education and Publication was split into separate Departments, a Department of Education and a Department of Publication.

The President made the following appointments of Curators to the respective Departments and the various Curators appointed their various Assistants, Associated, etc.

The new Staff is as follows:
The President in virtue of his office automatically becomes chief of the Staff.
Secretary of the Staff..E, H. Palmer.

DEPARTMENT OF MINERCLOGY. A. Llewellyn Jones, Curator; Walter E. PriceJr. and Elra M. Palmer, Assistant Curators; John B. Calder, Benjamin Calder, Roger Hecklinger, Herbert C. Moore, and Charles Svec, Associate Curators; L. Bryant Mathers, Jr. and Ned Crosby, Juniors.

DEPARTMENT OF PALEONTOLOGY. Elra M. Palmer, Curator; John B. Calder and A. Llewellyn Jones Assistant Curators; Benjamin Calder and Roger Hecklinger, Associate Curators.

DEPARTMENT OF ENTOMOLOGY. F. Stansbury Haydon, Curator: Edgar Gretsky, Assistant Curator.

DEPARTMENT OF MARINE RESEARCH. Gilbert C. Klingel, Curator; Harry M. Zachary, Assistant Curator; Charles Svec, Assistant Curator of Conchology.

DEPARTMENT OF HERPETOLOGY. Harry C. Robertson, Curator; Gilbert C. Klingel Asst. Curator.

DEPARTMENT OF ORNITHOLOGY. Edmund B. Fladung Curator; William B. Tyrrell and Irving E. Hampe, Assistant Curators, W. Wallace Coleman, Gilbert C. Klingel, Edward McColgan, Bruce R. Overington, Henri Seibert, Associate Curators Andrew Goss, Junior.

DEPARTMENT OF ARCHAEOLOGY. Albert B. Rubenstien, Curator, Richard E. Stearns, Assistant Curator; W. Woodward Burkhart and Frank Grimm, Associate Curators.

DEPARTMENT OF BOTANY. Edmund B. Fladung, Acting Curator; Earl H. Palmer, Joseph White, Assistant Curators; Charles Sevcik, Associate Curator.

LIBRARY. John B. Calder, Librarian; Eugene R. Polacek and Earl H. Palmer, Assistant Librarians, W. Burkhart and Edmund B. Fladung Jr. Junior Librarians.

DEPARTMENT OF PUBLICATION. Herbert C. Moore, Editor, Edmund B. Fladung Jr. Assistant Editor. Heads of all Departments are Associates.

DEPARTMENT OF EDUCATION. Elma M. Palmer, Curator; John B. Calder, Assistant Curator. Earl H. Palmer, Secretary to the Department, Stanley A. Crockett, Secretary to the Curator. Charles H. Waller, Artist for the Department. All the heads of Departments are Associates.

JULY NOTES CONTINUED IN AUGUST ISSUE.

THE NATURAL HISTORY SOCIETY OF MARYLAND 1929

BULLETIN

Vol. III Baltimore, August 1933 No. 12

BULLETIN NOTICE

Beginning with the September issue of the Bulletin, the first number of Vol. IV, Mr. Herbert Moore will become Editor and Mr. Edmund B. Fladung Jr., Assistant Editor. It is intended to increase the size and form of the issues of the new Volume.

The old size was four pages 5½ inches by 8½ inches. The new size will be six pages 8½ inches by 11 inches. From time to time there will be illustrated drawings, maps and diagrams accompanying articles. Other features are planned which will appear later on.

At the expiration of the year a printed cover and an index will be mailed each member. Members are urged to preserve their copies if they desire to keep the Bulletins for their files, as we only print a limited number and the requests for back numbers often cause us to run out of an issue. We are only keeping sufficient copies for the Society's records.

Edmund B. Fladung
President.

BIRDS SHARE IN U.S. RELIEF PROGRAM

Our Federal Relief Program is further reaching than one can imagine. Not only is man benefitted, by the United States unemployment relief program, but according to Mr. Paul G. Redington, Chief of the Bureau of Biological Survey, United States Department of Agriculture the birds are benefitted as well.

This is especially true of the waterfowl of Maryland, which are being protected by the improvement of the Blackwater Migratory Bird Refuge, near Cambridge, Maryland. This refuge is the breeding grounds for black duck and blue winged teal. The Mallards and Pintails also concentrate on the Blackwater marshes during the migration season. The Civilian Conservation Corps are improving this refuge as well as a number of others in various states.

This statement is of special interest to us because prior to 1929 but few if any of the blue-winged teal were then to be found in Maryland. According to the Maryland Conservationist, 1932 Summbr issue, the first record for some time was on July 25, 1929, when Mr. Talbott Denmead, observed fourteen or fifteen birds of this species on the Blackwater River in Dorchester County, Maryland. On April 28, 1931, twelve were observed and on April 30, 1931, five pairs were observed by Mr. Denmead on the same River.

Since then the bird is on a steady increase in this as well as other localities around Maryland, and with proper kept preserves and protection, teal as well as other birds will become abundant throughout the state.

Edmund P. Fladung
Department of Ornithology.

NOTES
(Continued from July)

GEOLOGY. Mr. A. Llewellyn Jones, Curator of Mineralogy and Assistant Curator of Paleon-

tology spent three days from July 21 to 24 at the Eckhart Mines, Maryland, to study the Permian deposits of the Paleozoic period. Some fossil plants were found in the Georgia coal seam of the Dunkhard formation.

JUNIOR MEETING. The monthly meeting of the Junior Division was held on July 29th. Mr. Bryant Mather gave a very interesting talk on the minerals within a fifteen mile radius of the City of Baltimore.

AUGUST NOTES.

ORNITHOLOGY. Mr. W. Wallace Coleman, former Curator of Ornithology, and Associate Curator at present, who has been residing in Saskatoon Saskatchwan, Canada, for the past two years, has returned to Baltimore for a six week vavation with Mrs. Coleman.

PALEONTOLOGICAL EXHIBIT. The Department of Paleontology had a very fine exhibit of mammal fossils from the Miocene deposits, at the Central Branch of the Enoch Pratt Library. Specimens of note were the two skulls of prehistoric whales and the two five foot whale mandibles. The exhibit was undoubtedly the finest of its kind ever seen in Baltimore. Many favorable comments were received and the daily press gave it wide publicity. The exhibit was held from July 24th to August 11 inclusive.

JUNIOR MEETING. On August 19th the Junior Division held its monthly meeting. Mr. W. Wallace Coleman gave an illustrated lecture on the Natural History of Saskatoon, Canada.

Ornithological Lecture. With the event of Mr. W. W. Coleman's visit to Baltimore, the Society had the pleasure of hearing a lecture by Mr. Coleman on the Natural History of Saskatoon on August 22nd.

The most striking feature of the lecture was the birds of Saskatoon, especially the

white-rumped shrike and the yellow warbler. Other interesting observations were on the pine gross beak, the long-eared owl, Western great horned owl and the pintail duck. The lecture was well illustrated with lantern slides.

PALEONTOLOGICAL EXPEDITION RETURN. On August 25th after a period of three weeks the St. Mary's Paleontological Expedition Number two returned. The Expedition was under the leadership of Mr. Elra M. Palmer, Curator. Mr. Palmer was accompanied by Assistant Curator John Calder and Associate Curator Benjamin Calder. The expedition would have continued much longer in the field but owing to the recent storm and heavy rain, it was forced to abandon the work for the present.

CHESS TOURNAMENT. On August 28th, a social evening with a Chess Tournament as the main attraction was enjoyed by ten members of the Society. The players were Messrs. Allen, Coleman, Edmund B. Fladung, Edmund B. Fladung Jr., Jones, Klingel, Edward McColgan, James McColgan, Moore and Overington.

PALEONTOLOGICAL DISCOVERY. Mr. Elra M. Palmer, Earl H. Palmer, Mr. John Calder and Benjamin Calder, while on a trip to Governors Run, ~~St. Mary's County~~ on August 29th, discovered a whale skull. This skull is one of the largest ever discovered and masures six feet in length. The upper mandible is present. Mr. Fladung and Mr. Klingel rushed to aid the excavation of the fossil which was finally accomplished at two o'clock the next morning. Mr. Hilpert aided materially in transporting the heavy specimen by granting us the use of his truck.