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PROCEEDINGS
OF THE
Royal Zoological
Society
OF
NEW SOUTH WALES
for the Year 1952-53

Price, 3/-
(Free to all Members and Associates)



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ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

Established 1879

REGISTERED UNDER THE COMPANIES ACT 1899 (1917)

Patron:

His Excellency Lieutenant-General Sir John Northcott, K.C.M.G.,
K.C.V.O., C.B.

Vice-Patrons:

Sir Philip Woolcott Game, G.C.V.O., G.B.E., K.C.B., K.C.M.G., D.S.O.
The Right Honourable Sir John Greig Latham, G.C.M.G.

COUNCIL, 1953-54

President: James Roy Kinghorn, F.R.Z.S., C.M.Z.S., F.C.A.S.

Vice-Presidents:

Sir Edward Hallstrom, K.B., F.R.Z.S.
Garnet Halloran, M.D., B.Sc., F.R.C.S. (Edin.), F.R.A.C.S., F.R.Z.S.,
Emil Herman Zeck, F.R.Z.S.
Aubrey Halloran, O.B.E., B.A., LL.B.

Honorary Secretary: Mrs. Leone Harford.

Honorary Solicitor: Aubrey Halloran, O.B.E., B.A., LL.B.

Honorary Editor: Gilbert Percy Whitley, F.R.Z.S.

Acting Honorary Treasurer: R. Murnin.

Assistant Honorary Treasurer: C. Laserson, F.R.Z.S.

Members of Council:

Lieut.-Colonel Henry Burgh	Anthony Irwin Ormsby, LL.B.
Norman Chaffer	Theodore Cleveland Roughley, B.Sc., F.R.Z.S.
Ernest Jeffrey Gadsden	Ellis Le Geyt Troughton, F.R.Z.S., C.M.Z.S.
Percy Fincham Harvey	John Waterhouse.
James Allen Keast, M.Sc.	
Geoffery Alan Johnson	

OFFICERS (Non-Councillors)

Honorary Auditor: M. S. Davies, F.C.A. (Aust.).

Honorary Librarian: Mrs. P. R. Johnston.

Assistant Honorary Secretary: Miss J. M. Coleman.

OFFICERS OF SECTIONS

Avicultural Section:

Chairman: L. Webber
Hon. Secretary: P. Harvey

Marine Zoological Section:

Chairman: F. McCamley
Hon. Secretary: L. Walters

Budgerigar Section:

Chairman: H. Yardley
Hon. Secretary: J. Bright

Ornithological Section:

Chairman: J. Francis
Hon. Secretary: A. McGill

General Section:

Chairman: E. J. Gadsden
Hon. Secretary: P. R. Johnston

ROYAL ZOOLOGICAL SOCIETY

OF

NEW SOUTH WALES

The Seventy-third Annual Meeting was held at Taronga Park, Mosman, on 25th July, 1953. Over 120 members and friends were present. The Hon. Secretary presented the

73rd ANNUAL REPORT

Patron.—During the year the President approached His Excellency the Governor of New South Wales, Lieut.-General Sir John Northcott, who has graciously extended his patronage to the Society.

Membership at 1st July, 1953.—The total membership of the Society is 537, this is composed of 1 Endowment Member, 3 Associate Benefactors, 7 Honorary Members, 57 Life Members, 328 Ordinary Members, 4 Honorary Associate Members, 18 Life Associate Members, 96 Associate Members and 23 Junior Members.

A total of 92 members were removed from the Register: 56 of these in terms of Article 9 of the Constitution, 27 by resignation and 10 by death. Membership over the past year has dropped considerably, and it is hoped that all members will do their best to interest and introduce new members to the Society.

Council.—Twelve meetings of the Council were held during the year, the average attendance being 11. Mr. Allen Keast has leave of absence for 12 months; he is attending Harvard University, U.S.A.

In terms of Article 26, Mr. E. J. Gadsden, Mr. G. A. Johnson and Mr. J. Waterhouse were appointed to council.

Honours.—The Council is pleased to record that Her Most Gracious Majesty, Queen Elizabeth II has conferred the C.M.G. on Mr. A. O. Oberg, a member of some years' standing, and the O.B.E. on our Councillor, Mr. Aubrey Halloran. Six members of Council received the Coronation Medal, as did several other members.

Appointments.—During their stay in Australia, Prof. John Hough of Colorado and Prof. John Moore of New York took a great interest in the Society and they were made Honorary Associate Members.

Fellows.—The Qualifications Committee recommended that Mr. B. C. Cotton (Conchology) of South Australia, Dr. Garnet Halloran (Aviculture) and Miss E. C. Pope, M.Sc., be made "Fellows" of the Society. It is of interest to note that Miss Pope is the second lady to receive this distinction in the 73 years of the Society's history. Presentation of the Certificate was made to Miss Pope at the meeting.

Publications.—The *Australian Zoologist*, Vol. XII, Part 1, is in the hands of the printer and should be issued at an early date. The *Proceedings* for 1951-52 was issued in November 1952. The *Proceedings* is now registered as a Periodical, thus reducing the cost of postage.

Special Lecture.—Under the auspices of the Society, Dr Hans Hass delivered an address "Diving to Adventure" on Monday, 2nd February, at the Australian Museum which was followed by a supper party at Usher's Hotel.

Ladies' Auxiliary.—Several successful functions were held during the year and a cheque was presented to the Society at the Annual General Meeting.

Sections.—These have maintained a high standard of lectures and have functioned successfully throughout the year, as their reports show.

Financial.—The financial position has improved slightly but a further increase in the rental has proved a big obstacle.

The adoption of the Annual Report was moved by Mr. J. R. Kinghorn, seconded by Lieut.-Colonel H. Burgh, and carried.

The six retiring councillors (Sir Edward Hallstrom and Messrs. A. Halloran, J. R. Kinghorn, E. J. Gadsden, G. A. Johnson and J. Waterhouse) were re-elected.

PRESIDENTIAL ADDRESS

The President addressed the members for a few minutes on the activities of the Society in general, during which he made the following remarks:—

"During the year I have attended approximately thirty of the sectional meetings and noted with satisfaction the improved standard of administration and scientific work, but was somewhat disappointed that some reports on important activities had not been reported to Council from time to time, as suggested by me during my second year of office.

I would be pleased if the aviculturists would soon be able to complete their notes on bird ailments and treatment. It is suggested also that a publicity officer for each section be appointed, to report to the Press any scientific matters of public interest, whilst avoiding publicity on general administrative activities. During the year Miss E. Pope, Chairman of the General Zoology Section, held instructional classes on the preparation of scientific papers, and these should have far-reaching success.

The Council is now considering ways and means of extending the activities and interests of the Society to country centres, and it is hoped that a satisfactory scheme will be inaugurated. Council is also reconsidering the biennial award of a Diploma for zoological work of merit, as was done some years ago. It is regretted that because of staff difficulties, the proposed establishment of an insect house at Taronga Park has been temporarily suspended.

To smooth out the difficulties of the Chairman in welcoming visitors to sectional meetings, it is suggested that the attendance book be signed on entering the room, and handed to the Chairman as soon as the meeting is opened, and not sent round during the reading of, and discussion on minutes, as at present. I offer my grateful thanks to the Ladies' Auxiliary for the valuable work done during the year; to the Secretary and Treasurer for the part they played in smoothing out many difficulties, and to Councillors for their generous support during my year of office."

The Hon. Treasurer, Mr. C. F. Laceron, read his report, which was adopted, subject to audit.

Votes of thanks to the speakers and to office-bearers of the Society for their work during the year were proposed and carried. The President proposed a vote of thanks to the Press for their services.

Several of the older members of the Society addressed the meeting. Mr. Aubrey Halloran, who had been 53 years on the Council, spoke of the need for an increased Government Grant. Mr. E. J. Bryce referred to conditions overseas. Mr. E. F. Pollock, who had recently crossed the Equator for the 27th time, told of Portuguese East Africa and the Kruger National Park. Mr. A. E. Stephen supported Mr. Halloran's remarks about Government Grant and referred to a proposed inland zoo in the Warrumbungle Range.

OFFICERS FOR THE YEAR 1953-54

President: Mr. J. R. Kinghorn.

Vice-Presidents: Sir Edward Hallstrom, Dr. G. Halloran, Messrs. A. Halloran and E. H. Zeck.

Honorary Secretary: Mrs. L. Harford.

Honorary Treasurer (to be elected).

Honorary Solicitor: Mr. A. Halloran.

Honorary Editor: Mr. G. P. Whitley.

Honorary Librarian: Mrs. P. R. Johnston.

Honorary Auditor: Mr. M. S. Davies.

Assistant Honorary Secretary: Mrs. F. E. Lane (later Miss J. M. Coleman).

Assistant Honorary Treasurer: Mr. L. Webber (later Mr. R. Murnin).

Publication Committee: Mrs. L. Harford (convener), Messrs. E. H. Zeck, C. F. Laseron and G. P. Whitley and (ex officio) Executive Officers.

Book Review

"Mammalian Hybrids." By Annie P. Gray. (Commonwealth Bureau of Animal Breeding and Genetics Technical Communication No. 10, 1954, 144 pp. Obtainable from the C.A.B. Liaison Officer at 314 Albert Street, East Melbourne, C.2. Price 26/3.)

Zoologists generally and mammalogists and geneticists in particular will welcome the present annotated compilation both as a work of reference and as a reliable guide to the large number of mammalian hybrids reported in the literature. From time to time one hears and reads of many bizarre results obtained by crossbreeding the most unlikely animals. Few of these are either corroborated or categorically denied in the works of scientific zoology. It is, therefore, specially opportune for a work to be devoted precisely to this end.

Over 300 hybrids are listed. They are grouped within families and arranged alphabetically under genera. Their fertility and commercial qualities are indicated wherever such information is available. Sub-specific crosses have been included in cases where some systematists prefer to give the animals in question specific rank. An index of species and a bibliography of more than 600 titles complete the volume.

ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES REVENUE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1952

GENERAL ACCOUNT

	£	s.	d.	£	s.	d.
To Office Rent	640	13	0			
" Office Stationery and Postages	120	11	6			
" Telephone	28	2	6			
" Electricity	18	2	9			
" Insurance	7	15	0			
" Publication Expenses	242	14	1			
" Sundry Expenses	93	3	6			
	1,151 2 4					
" Surplus of Income over Expenditure for year ended 30th June, 1952				1,184	10	1
				£1,184 10 1		

PUBLICATION ACCOUNT

	£	s.	d.	£	s.	d.
To Publication Costs—Zoologist	495	1	7			
				£495 1 7		
By Sales—Handbooks	239	2	1			
" Subscriptions—Australian Zoologist	42	1	3			
" Interest—Bonds	35	14	0			
	316 17 4					
" Government Grant	50	0	0			
" Balance of Excess of Expenditure over Income for year ended 30th June, 1952	128	4	3			
				£495 1 7		

BUILDING FUND

	£	s.	d.	£	s.	d.
To Balance transferred to Building Fund	25	17	6			
				£25 17 6		
By Interest—Investments	22	15	0			
" Interest—Bank Account	3	2	6			
	25 17 6					
				£25 17 6		

ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

BALANCE SHEET AS AT 30th JUNE, 1952

LIABILITIES			ASSETS		
	£	s. d.	£	s. d.	£ s. d.
Accumulated Funds:					
Balance as at 30th June, 1951 ..	3,524	0 8	Furniture and Fittings:		
Add Surplus for year ended 30th June, 1952—General Account	33	7 9	Office Lecture Room Furniture		
			and Equipment—at cost	494	7 11
			Library Books—at cost	503	4 6
			"Parrot" Paintings—at cost	500	0 0
					1,497 12 5
Less Deficiency for year ended 30th June, 1952—Publication Account	3,557	8 5	INVESTMENTS (at face value):		
			Australian Commonwealth Inscribed Stock	1,104	7 6
			Australian Commonwealth Treasury Bond	100	0 0
					1,204 7 6
Building Fund:			Commonwealth Bank:		
Balance as at 30th June, 1951 ..	847	8 4	General Account	878	19 6
Add Interest received for year..	25	17 6	Cash in Hand	5	13 9
					884 13 3
			Building Fund Investments:		
			Australian Commonwealth Treasury Bonds	700	0 0
			Commonwealth Savings Bank..	173	5 10
					873 5 10
Subscriptions paid in advance ...		157 9 0			
					£4,459 19 0

AUDITOR'S REPORT TO THE MEMBERS OF THE ROYAL ZOOLOGICAL SOCIETY OF NEW SOUTH WALES

I hereby report that I have audited the books and accounts of the Royal Zoological Society of New South Wales for the year ended 30th June, 1952, and have obtained all the information and explanations I have required, and, in my opinion, the above Balance Sheet exhibits a true and correct view of the state of the Society's affairs as at 30th June, 1952, according to the best of my information and the explanations given to me and as shown by the books of the Society.

I have examined the Register of Members and other records which the Society is required to keep by law or by its Articles and am of the opinion that such records have been properly kept.

M. S. DAVIES, F.C.A. (Aust.),
Hon. Auditor.

Sydney, 4th March, 1953.



The late K. C. McKEOWN.

—Photo by courtesy of *Messrs. Angus and Robertson Ltd., Sydney.*

OBITUARY

KEITH COLLINGWOOD McKEOWN

The death of K. C. McKeown, F.R.Z.S. on August 21st, 1952, removed from our midst a well-known naturalist and author. From his earliest years he knew the bush and its creatures intimately. He was widely read in old and new literature, from classics to children's books and could usually help with a reference or allusion to almost any topic. He was also an amateur photographer. Born at Burwood, near Sydney, November 6th, 1892, McKeown spent his early years at Wollongbar, where, encouraged by W. W. Froggatt, he studied rain forest insects. In 1915 he was a clerk to the Water Conservation and Irrigation Commission, Murrumbidgee Irrigation Areas and in 1927 Entomological Research Officer in the same, controlling insect and other fruit and crop pests. He became Assistant Entomologist at The Australian Museum in 1929. The Royal Zoological Society elected him to Fellowship in 1942 and he was a member of Council from 1944. He was a member of the Scientific Advisory Committee to the Mount Kosciusko State Park Trust. During the war, he served in the V.D.C.

His books were: *Insect Wonders of Australia* (1935 & 1944), *Spider Wonders of Australia* (1936), *Land of Byamee. Australian Nature in Legends and Fact* (1938), *The Magic Seeds or Tessa in Termitaria* (1940), *Australian Insects* (1942 & 1945), *Catalogue of the Cerambycidae* (1947), *Nature in Australia* (1949) and *Australian Spiders: Their Lives and Habits* (1952).

McKeown specialized on the Australian longicorn beetles (Cerambycidae) and wrote many articles on insects and arachnids, economic entomology, wild life and conservation, the food of birds and fresh-water fishes, and the aurora australis in journals such as the *Australian Museum Magazine*, *Australian Zoologist*, *Records of the Australian Museum*, *Proceedings of the Linnean and Royal Zoological Societies*, *Australian Naturalist*, *Agricultural Gazette of New South Wales*, *Report of the Water Conservation and Irrigation Commission*, and in E. W. Ferguson's *Mosquito Survey of the Murrumbidgee Irrigation Area*. He also contributed articles to the forthcoming *Australian Encyclopædia* and even wrote a serial novel which was issued in the *Sydney Morning Herald*. He broadcast radio talks and wrote newspaper articles about insects. His fine library, particularly rich in items concerning Antarctica, was sold after his death and is now scattered.

He is survived by Mrs. Marie J. McKeown and their son, Edward.

G.P.W.

REPORTS OF SECTIONS

Avicultural Section

(No report submitted for publication.)

Budgerigar Section

(No report submitted for publication.)

General Section

The General Section, during the past year, has continued to implement its programme of bringing the Society before all those interested in Zoology and the General Public.

The A.N.Z.A.A.S. Congress of 1952 provided the section with its first opportunity to show the scientific world that this society was again taking an active interest in the happenings of other organisations. Under the auspices of the Society, the section presented a film session that was attended by many of the A.N.Z.A.A.S. members. The section particularly appreciated the ready co-operation of Messrs. N. Chaffer and J. Hallstrom in loaning appropriate films for the occasion. From the number of overseas visitors who attended the screening of the films, it was quite apparent that the future activities of this society would be watched with greater interest than has been the case in the past.

The outstanding success of the section's activities occurred in February 1953, when again, on behalf of the Society, the section presented a lecture by Dr. Hans Hass. The attendance on this particular evening was estimated at 450 persons, and we believe that this constituted a record for post-war attendances, if not for all time.

Dr. Haas addressed the gathering on his experiences whilst diving in the Red Sea and in the waters of the Great Barrier Reef. From the fluency of the Doctor's English it was hard to realise that this was the first occasion on which he had given an address entirely in the English language.

During the evening the lecture was recorded on a tape recorder and later replayed to a large audience at the Underwater Spear Fishermen's Association, thus resulting in further publicity for the Society.

Normal activities in the form of monthly meetings proceeded without interruption throughout the year. Speakers at the various meetings covered an extremely wide range of subjects.

Professor J. Moore of the U.S.A. provided members with an evening of exceptional interest, when he spoke on "The Frogs of Eastern Australia", a field that has been sadly neglected for many years in this State.

Another highlight among the lectures was an address by Miss I. Bennett on "The Work of the Danish Deep Sea expedition of 1952". Miss Bennett spent some time on "Galathea", the expedition's ship, while that vessel was cruising in South Eastern Australian waters. From her experiences Miss Bennett was able to give members a graphic description of the work carried out by the Danish party.

Mr. Howard Hughes of the Australian Museum also gave an address that drew considerable attention. He spoke on "Photographing Animals in Colour", and although not a zoological lecture in the strict sense of the term, the deviation from the normal type of lecture was enthusiastically received. In his address Mr. Hughes covered a vast range of subjects and demonstrated his own technique in using the colour camera.

A new feature was put into operation in the latter part of the year, when members of the section were invited to speak on a time limit and submit themselves to the criticism of the audience. Mrs. Woolacott, Mr. Kinghorn and Mr. McAlpine provided the material for the evening which was greatly enjoyed by all.

The section noted with keen interest that an increasing number of regular attenders were writing papers, both scientific and popular, in recognised journals. Further efforts in this direction will do much to assist in bringing the society before the public eye.

The regular attendance of the society's President and two councillors at section meetings was greatly appreciated by all. Average attendances at monthly meetings showed a steady increase over those of last year.

Section Officers have been extremely pleased to see the section well represented at the functions held by the Ladies' Auxiliary. Several lady members of this section have given their active support to the auxiliary during the year.

The success of the year's activities was in no small measure due to the helpful assistance and co-operation of officers of the Australian Museum, The Department of Zoology of the University of Sydney, and the Marine Zoological Section of this Society.

The following is a complete list of lectures for the past year:—

July: "Mammals of Tasmania" by Mr. E. Le G. Troughton.

September: "Work of the 'Galathea' Expedition" by Miss I. Bennett.

October: "Shore Fishes" by Mr. G. P. Whitley.

November: "A Beetle Collector in the Sydney Area" by Mr. B. Salkild.

December: "Animal Life in Australian Deserts" by Mr. A. Keast.

January: "Photographing Animals in Colour" by Mr. H. Hughes.

March: "The Whitsunday Group" by Mrs. L. Harford.

April: "Molluscs" by Mrs. Woolacott. "Crabs" by Mr. J. R. Kinghorn. "Systematics in Limpets" by Mr. D. McAlpine.

May: "The Frogs of Eastern Australia" by Professor J. Moore.

ELIZABETH C. POPE, Chairman.

PETER R. JOHNSTON, Hon. Secretary.

Marine Zoological Section

The past year's activities of the Marine section and the conchology group have shown that our section has continued to hold the support of its members, with an average attendance at monthly meetings of twenty-five, as compared with twenty-two for the previous year.

The thanks of the executive are extended to the following lecturers for their entertaining and instructive contributions to the past year's programme.

Mr. Mel Ward, F.R.Z.S.; Miss P. Kott; Mr. C. Laseron, F.R.Z.S.; Mr. Kinghorn, F.R.Z.S.; Miss B. Dew; Mr. E. Troughton, F.R.Z.S.; Miss E. Pope, F.R.Z.S.; and to Mrs. Harford and Mr. Stevenson for the screening of films.

We also wish to thank our President, Mr. Kinghorn, and our general secretary, Mrs. L. Harford for their active interest in and attendance at Marine Section meetings.

Field days were held at Long Reef, Shark Island, and Bottle and Glass Rocks and all were well attended.

The past year produced the section's first publication, "The Marine Zoologist" which caused considerable interest and we hope that the second number will be even more successful.

The conchology group pursued its policy of intensive study and thirteen mollusc families were discussed with most species being tabled for examination.

In conclusion the executive wishes to thank all members for their support and we hope that the activities of the coming year will show a further advance in the welfare of the section.

LLOYD WALTERS,
Hon. Secretary.

Ornithological Section

This review of the year's activities shows that the period has been quite a successful one for the Section. Thanks are recorded to all those who by either active participation, or by support and interest, contributed towards the year's programme. Monthly meetings were held regularly during the period, in conjunction with the New South Wales Branch of the Royal Australasian Ornithologists' Union, as in previous years.

The highest attendance at any one meeting was 84, the lowest 35, and the overall average 57. This represents a noticeable increase over past years. Details were substantially as listed in the *Sylabus* in last year's *Proceedings*, page 17.

Amongst those visitors who were welcomed were Mr. Hans Minder of Switzerland, Professor Hartshorne of Chicago University, Professor Moore of Colombia University, Messrs. Cooper and Hitchcock from Melbourne, Dr. Carrick from Scotland, Mr. Schmidt of Denmark, Mr. J. Allen Tubb from Borneo, Mr. Hobbs of Watford, England, Mr. Swanston of the University of Illinois, Miss Snell of Vermont, U.S.A., and Dr. Wagner of the Bremen Museum, Germany. Professor and Mrs. Hough, who had been regular attenders at meetings during their stay in Sydney, were extended words of farewell at the November meeting. Mr. J. Allen Keast, of the Australian Museum, and Assistant-Secretary of the Section for some years, was congratulated on his receiving a

Master of Science degree and scholarship for twelve months at Harvard University. We also appreciated the frequent visits to the Section meetings by the President of the R.Z.S., Mr. J. R. Kinghorn.

No organized outing was arranged, but members frequently planned outings to near-Sydney areas. Localities further afield also received attention by members, and included Brewarrina, Macquarie Marshes, Quambone, Cowra, the fringe of the Hawkesbury Sandstone area, and even north Queensland. Quite a few members attended the Gould League Camp in October at Capertee, and a small representation from New South Wales was amongst the personnel of the R.A.O.U. Camp-out in Central Australia.

The Section was most active on conservation matters. Strong protests were made to the authorities concerned when some 'bulldozing' destroyed an interesting strip of swamp vegetation adjoining Dee Why Lagoon. A sub-committee investigated avenues for assistance in protecting, and promulgating study at, the Crommelin Biological Station adjoining Warrah Sanctuary at Pearl Beach. Members still hope that their efforts to establish a National Mallee Reserve in western New South Wales will in the near future receive sympathetic attention towards fulfilment. Instances of indiscriminate shooting in sanctuary areas were noticeable, and particularly ominous was the evidence of slaughter amongst the wading birds at the Cook's River estuary, a much-favoured feeding ground of migratory waders, and consequently much-frequented by wader observers. Conspicuous and vandal-proof sanctuary notices were urged for such areas.

Sympathetic attention to various requests by the Section was given by the Fauna Protection Panel, through the Chief Guardian of Fauna. The request for a present-day Survey on the Bustard, or Plain Turkey, was willingly accepted, and the Panel also included Scrub Turkey in the same investigation. Enquiries were made through various channels and response came from Forestry Officers. Agricultural Field Officers, Rangers, R.A.O.U. members, and a few other sources, amounting to 151 reports received. Our knowledge of the present-day range and numbers of the Bustard was considerably augmented, but fears for its possible extermination in the near future were by no means proved groundless. Its protection in this State still requires strict policing. The numerical strength of the Brush Turkey clearly shows a serious decline also, but happily it still occurs over a large area. Destruction of habitat, shooting and predators (in that order of importance) cause a high mortality rate with this interesting brush-frequenting species.

Close contact by member with the Gould League has been evident. This Society does inestimable work through the schools and might be considered a veritable ornithological nursery. Its annual journal, *Gould League Notes*, is well illustrated and contains interesting reading. Further, it summarizes the activities during the year, which includes the Annual Camp (which this year for the first time was held during a non-vacation period, by special permission by the Education Department, and was broadened to a Nature Study Camp), Annual Concert and School literary competitions. It also depicts strikingly the work performed by Mr. J. E. Roberts, the League's Honorary Secretary, Treasurer and Editor.

At the Annual Meeting the following officers of the Ornithological Section were unanimously elected to office for 1953-1954.

Chairman: Mr. J. S. Francis.

Vice-Chairman: Lieutenant-Colonel H. B. Burgh.

Hon. Secretary: Mr. A. R. McGill.

Assistant Secretary: Mr. F. G. Johnstone.

Committee: Messrs. N. Chaffer, N. C. Fearnley, K. A. Hindwood, E. S. Hoskin and J. A. Palmer.

FIELD REPORT FOR 1952-1953

Each year a number of ornithological records that must be considered as distinctly unusual is either given at monthly meetings or forwarded by letter. A brief summary, such as this, cannot of course give important details, but assists in keeping them bracketed together for recording purposes. The season generally through the State was a good one, so nesting activity should have been somewhat widespread, and serious droughts in certain areas were non-existent so birds generally were not forced to wander to any extent.

Various trips to country centres all proved interesting, bird-life being generally considered plentiful, both numerically and specifically. At Cowra the Gilbert Whistler (*Pachycephala inornata*) was found breeding and was successfully photographed and filmed. At the Gould League Camp near Capertee (right on the Dividing Range) observers considered main interest centred round the meeting of typical eastern birds and those typical of the west of the State. The locality might be considered near the western range-limits of the Lyre-bird (*Menura novaehollandiae*), Rock Warbler (*Origma rubricata*), Brush Cuckoo (*Cacomantis variolosus*), and Red-browed Tree-Creeper (*Climacteris erythrops*), as well as the habitat of western avifauna such as the Whiteface (*Aphelocephala leucopsis*), Hooded Robin (*Melanodryas cucullata*), Red-backed Parrot (*Psephotus haematonotus*) and Chough (*Corcorax melanorhamphus*). Messrs. Hindwood and Sharland made a survey of the western and northern fringe of the Hawkesbury Sandstone geological area and were successful at various places in securing evidence of Rock Warbler populations. During the trip they visited Dripstone (where interesting species were found) and mallee areas north-east of Dubbo, where breeding evidence of the Mallee Fowl (*Leipoa ocellata*) was found. Mr. Palmer paid a brief visit to Broken Hill and came home via Cobar and Bourke. A small party of Bustards (*Eupodotis australis*) was seen near the last-mentioned town. Mr. McGill observed small numbers of Varied Trillers (*Lalage leucomela*) feeding in fig-trees in coastal scrub near the Manning River estuary, which apparently extends the known range of the species some 200 miles south. The Spectacled Flycatcher (*Monarcha trivirgata*) was seen at the same place. Mr. McKie visited Quambone and amongst birds seen there were the Brolga (*Grus rubicunda*) and Spotted Bower-bird (*Chlamydera maculata*). The Macquarie Marshes proved again an interesting place for Messrs. Johnstone and Brinsley, who were pleased to meet with the Pied Goose (*Anseranas semipalmata*), Brolga, and Fork-tailed Kite (*Milvus migrans*). Reports of prolific nesting by various species of ducks (especially the Pink-eared Duck, *Malacorhynchus membranaceus*, but not the Black Duck, *Anas superciliosa*, strangely) in the Hillston district were forwarded by Mr. Frith. Messrs. Moore and Leithead visited Brewarrina and experienced flood conditions in that area. The White-headed Pigeon (*Colomba norfolcensis*) was reported at Mt. Keira by Mr. McNamara and seen by other members visiting the locality. On the high-elevated heath country south-west of Mt. Keira, Mr. Chaffer had an interesting experience with the Eastern Bristle-bird (*Dasyornis brachypterus*) and secured successful photographs and film records at the nest.

A Silver Gull (*Larus novaehollandiae*) found dead at Tempe garbage depot in June 1953, proved to be a ringed bird banded on September 1952 at Altona Saltworks, Victoria. Further instances of ringed Gulls along the New South Wales coast would be of interest. There were also more records of Gannets (*Sula serrator*) picked up dead on the coast (one near Sydney) that were ringed as nestlings in New Zealand.

Migrant waders were noticeable, both in numbers and in species, in the Sydney district. Amongst the rarer ones observed were the Broad-billed Sandpiper (*Limicola falcinellus*), which has seldom been found even in Australia, but which appeared on the Botany Bay foreshores during January and February in surprising numbers, 17 birds once being counted; the Grey Plover (*Squatarola squatarola*), which occurred sparingly in the same locality; the Great Knot (*Calidris tenuirostris*), which was seen by a concentration of observers probably for the first time in the State, five birds being counted on two occasions, and which was the victim at least on one occasion of wanton shooting—ironically the first known New South Wales collected evidence; and the Terek Sandpiper (*Xenus cinereus*), which was noted at Boat Harbour by Mr. Hoskin, in December. The Eastern Knot (*Calidris canutus*) appeared in greater numbers than on any other known occasion—over a hundred birds were seen at times.

Three records in the Sydney district were especially interesting. An immature Purple-crowned Pigeon (*Ptilinopus superbus*) was picked up dead at Epping and forwarded to the Australian Museum. A second instance of the occurrence of the New Zealand Black-backed Gull (*Larus dominicanus*) was obtained at Botany Bay (the first was in 1943). First seen by Mr. Cooper, other observers saw the bird, which was apparently about two years of age by its plumage markings, and which remained in the locality for about six weeks. Late in July 1952 a Grey-headed Albatross (*Diomedea chrysostoma*) was picked up alive on Collaroy beach and forwarded to Taronga Park. Every effort was made to keep the bird alive, but it eventually succumbed and the specimen was forwarded to the Australian Museum.

The Wood Sandpiper (*Tringa glareola*), for the second year in succession, was found at Pitt Town Bottoms, where it remained some weeks (first seen by Mr. Lane) and three birds were recorded on one occasion. The Little Cuckoo-Shrike (*Coracina robusta*) was found breeding by Mr. Lane at Lane Cove—quite an unusual nesting record. The introduced Blackbird (*Turdus merula*), distinctly rare in New South Wales, was reported occasionally, one bird taking up permanent residence at Double Bay. The Pelican (*Pelecanus conspicillatus*) appeared in larger numbers than usual, and large flocks could be seen on Botany Bay. There was a noticeable influx of Pied Cormorants (*Phalacrocorax varius*) to the Botany Bay area. It is seldom recorded near Sydney. Regent Bower-birds (*Sericulus chrysocephalus*) showed evidence of late breeding in the Gosford district, being found feeding very young birds in April by Captain Hutchinson. A few reports of the Beautiful Firetail (*Zonaeginthus bellus*) were obtained by a few members in National Park. The Crescent Honeyeater (*Philidonyris pyrrhoptera*) visited Sydney areas in greater numbers than usual. The Drongo (*Chibia bracteata*) was observed in a few localities and one was caught in a rat trap at Parramatta after it had been accused of catching small birds. Good numbers of the Rainbow Lorikeet (*Trichoglossus moluccanus*) and the Scaly-breasted Lorikeet (*T. chlorolepidotus*) frequented the flowering coral trees in north Sydney localities.

Sea-bird observations at the Malabar sewer outfall were made regularly during the year. Counts proved that as many as 300 Wandering Albatrosses (*Diomedea exulans*) were present on occasions, whilst lesser numbers of the Black-browed species (*D. melanophris*) were always about. Giant Petrels (*Macronectes giganteus*) were common throughout most of the year and on one occasion the white phase was seen. Skuas were common on occasions and the Great Skua (*Catharacta skua*) (in winter months), Arctic Skua (*Stercorarius parasiticus*) and Pomarine Skua (*S. pomarinus*) (in summer time) were all noted.

ARNOLD R. MCGILL,

Hon. Secretary.

SYLLABUS OF SECTIONAL MEETINGS FOR 1953-54

Visitors are welcome and members are invited to bring their friends to any or all of the Society's meetings.

Avicultural Section.

Meets on the fourth Tuesday of each month. Lectures, films, etc.

Budgerigar Section.

Meets on the third Tuesday of each month. Exhibits, discussions.

General Section.

Meets on the second Tuesday of each month. Lectures, films, etc.

Marine Zoological Section.

Meets on the first Tuesday of each month. Lectures, etc.

Conchology Study Group.

Meets at 7.30 p.m. on the second Thursday in each month.

Ornithological Section.

Meetings, combined with those of the N.S.W. Branch of the Royal Australasian Ornithologists' Union, are held at 7.45 p.m. on the third Thursday of each month.

SYLLABUS FOR 1953-1954

1953—

July 16: Illustrated Address, by L. E. Richdale.

August 20: Illustrated Address, by A. A. Strom.

September 17: Screening of Films, by H. Dumbleton.

October 15: "As Dead as the Dodo," by Tom Iredale.

November 19: Illustrated Address, by N. Chaffer.

December 17: "The Romance of the Lyrebird," by A. H. Chisholm.

1954—

January 21: Illustrated Address, by P. A. Bourke.

February 18: Illustrated Address, by J. D. Waterhouse.

March 18: Screening of Films, by N. Chaffer.

April 15: Question Night.

May 20: "Some Tragedies of Bird Migration," by J. E. Roberts.

June 17: Annual Meeting: Chairman's Address.

SHE STANDS ON THE WATERS

BY TARLTON RAYMENT, F.R.Z.S.

(Honorary Associate in Entomology, National Museum, Victoria)

It was midsummer when I saw the first performance. The day was distressing, 118°F. in the shade. The perspiration dripped from my brow onto the eye-piece of the microscope, making further study impracticable. I slipped into my bathing trunks, and plunged into the cool waters of the lagoon surrounding Gunbower Island, in the Murray River, and which had been created by the flooding of the creeks by the huge Torrumbarry weir. I floated quietly on the water, observing the behaviour of the countless water-birds perched on the stark skeletons of the drowned red-gum trees.

Hullo! A wasp suddenly alighted daintily on the still surface of the water, and lowered her head as she stood on the tenuous film. She poised her purplish wings high above her back, as far as she could hold them from the water, and I could see that her legs were rigid. The pulvillus on each foot was spread out, and on this minute organ she rested in safety.

She could drink conveniently from the margin, I should say, as many Eumenids do, but for some inscrutable reason she alighted directly on the water. Two American observers, Phil and Nellie Rau, record that one species carried 7-11 pellets of mud to one load of water. By the clock, my wasp made five voyages, each of one minute; then had three "spells" from labour each of one minute; then a five minutes voyage for more water. The labour went on as regularly as clock-work.

She was close enough for me to observe the details of her anatomy. Oh, yes, I recognise the jet-black body, banded with a sash of brilliant reddish-orange colour. She is an alastorid wasp, so let us know her as *Paralastor diadema*. I can never forget her astonishing likeness to the solitary bee *Hylaeoides concinna*. When I go farther west, I find another bee, *Hylaeoides zonalis*, with a yellowish sash. Behold, in the same place, I take another alastorid of similar colour.

However, if floating on the lagoon be convenient for the observation of herons, it is certainly inconvenient for the critical study of insects of the land. I move my hands to maintain a balance—instantly the wasp's wings flash in a sudden down-beat, and she lifts straight up as lightly, silently, as a wisp of the very air itself.

Many years passed before I saw her again. Meanwhile, I could not resist musing on her astounding resemblance to *Hylaeoides*. Perhaps I should state it the other way round. The "books" tell me it is "Batesonian mimicry"; that is, birds attacked the alastorids, but finding them unpalatable, abandoned the chase for ever after. Bees banded and coloured like the alastorids enjoy a similar immunity, are not pursued, and therefore survive. Those which were unlike are quickly eaten, and soon disappear. But I am very suspicious of the whole theory—it may be right. It may be wrong, so I shall not waste your time on problems which can never be satisfactorily determined.

The next time *Paralastor* came to me she sought me out at my own home. It had rained heavily and pools of water shone everywhere. The mournful skies were at length drained of tears. The Sun smiled, warmly, and the wasps and the bees emerged once more, bent on their daily industry. While I was considering the abundance of water, behold, the alastorid arrives to investigate the new reservoirs of soft clear water which providence had placed so conveniently at hand. She hovers over the surface, like a diver estimating the depth before he plunges in, then down—she alights with graceful ease; raising not the slightest ripple on the film. I rejoice, I say, to have her close at hand.

Yes, her wings are held high; the pulvilli are extended, and with a hand-glass I can see plainly that she is drinking—well, taking in water, of that I am certain—of the drinking I am not so sure, but I shall return to that presently.

Perhaps I should tell you that the seaside resort of Sandringham rests on a bed of Old Red Sandstone, and the few slight elevations, now covered entirely with houses, were originally old yellow sand-dunes. Here and there are patches of "marl", a mixture of clay and sand, of bright golden colour, very pleasing indeed when laid on garden paths. Of course, when the marl is dried out in summer, it is indeed tough, even stony hard.

Never-the-less, in mid-summer, the alastorid prefers to gather her bricks at an old stratum of marl. I watch her arrive on her favourite patch, and moisten it with water, before paring off with her mandibles the materials for her tiny "bricks". Her flight is leisurely, soft, silent. Presently she is a-wing. The "marl" is the only clayey substance in the district.

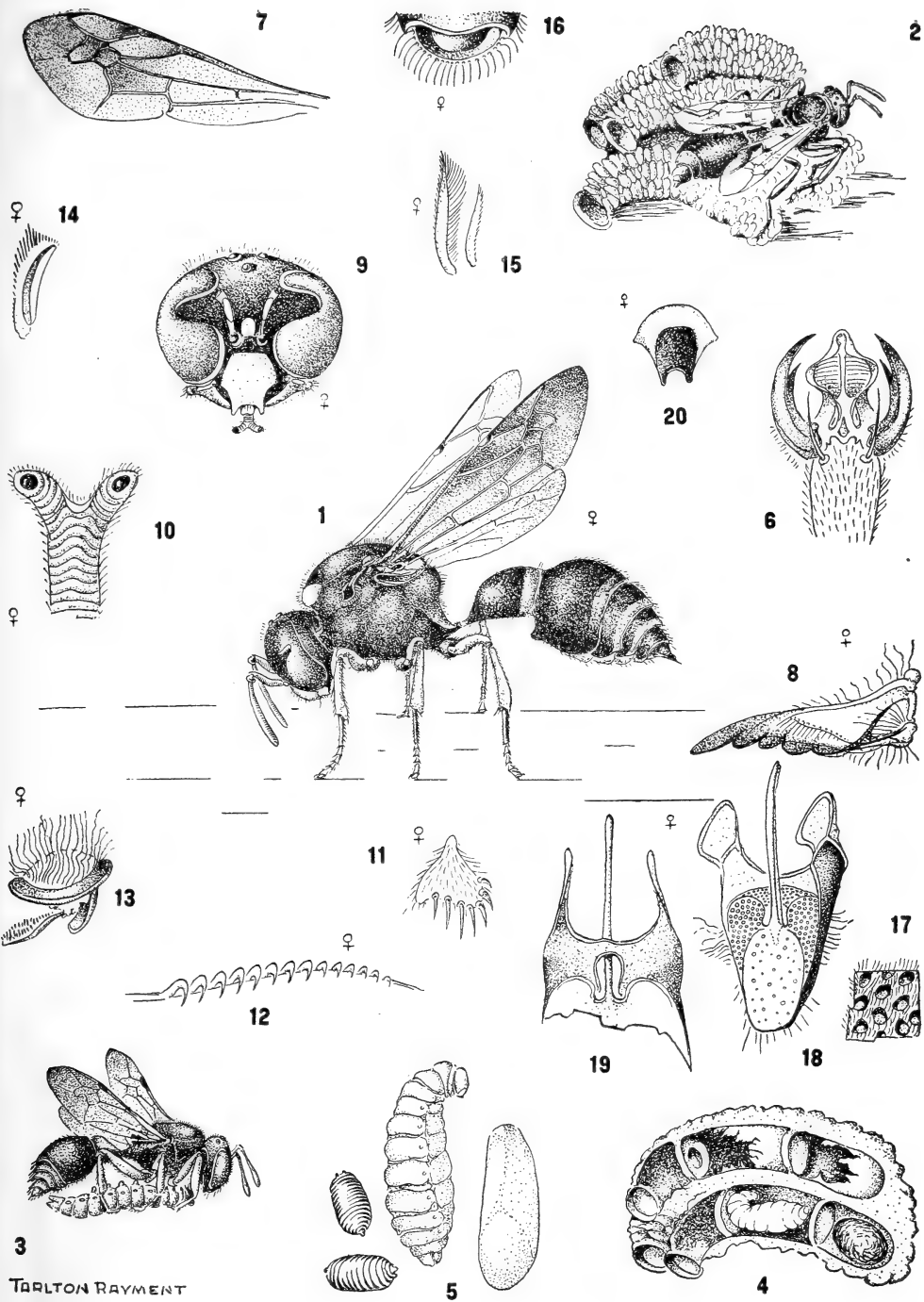
I plotted her line of flight, and discovered her "nest" under the ledge of a northern window-sill, some thirty or so feet distant. Now I can study her architectural methods at my ease. She works without haste, almost drowsily, concentrating on the work immediately in hand. A "dab" of mud is added to the structure only after she had previously moistened the "wall" she is building. I can count every brick, certain in the knowledge that the dark wet one is surely the last laid.

The home is always constructed in an angle that affords some shelter from the rain, for the golden mud is easily dissolved. The exterior is a kind of rough-cast cement, very similar indeed to the work of the fairy- or bottle-martin, but the interior is smooth enough, and draped with a stout, white silken membrane. When the structure is sectioned it is seen to consist of several cells, or more properly, cylinders, some two inches in length, on their sides. The whole is cemented over with a neat roughcast. The interior diameter of each cell is three-eighths of an inch, and its construction may take nearly a week of industry.

The portal to each cell is usually curved downwards a trifle, like a short spout, and the plug closing the cell is usually placed a little in from the doorway. The storing of the cradle does not take very long, for the provender is close at hand. The wasp darts down to the cabbage patch, hunts out a green caterpillar, stings it, and carries the victim home held tightly upside down against her "chest" by the legs like a green keel. There is another smooth green caterpillar that feeds on the "Shasta Daisy", and I believe she will sometimes take these; both kinds are almost as long as the wasp.

When four or so victims have been captured, and rendered inert, *but not killed*, the cell is closed with a wad or capping of mud some three millimetres in thickness. The egg is slightly creamy in colour, and is suspended by a thread. The larva, too, is of an ivory tint. The baby wasp will pass through the winter as a wingless, eyeless, legless grub, with the smaller head-segments curved over at a right-angle to the rest of the fat body. It will remain in this quiescent state until the following spring, when it will have a rapid development—purple eyes; two strings of white beads for the antennæ; imaginal buds for the legs, curious hollow pads for wings—then the final ecdysis, the shedding of the last skin. Behold, the glorious alastorid herself, well named *Paralastor diadema*, sp. nov.¹

1. *P. diadema* Raym. is very close to *P. emarginatus* Sauss, but is easily separated by the ivory-coloured horseshoe on the clypeus and the two dots on the occiput.



TARLTON RAYMENT

With the first chill of autumn her industry dwindles; the wasp works only spasmodically. She is glad enough on cool mornings to creep out to rest on a sunny leaf and bask in the sunshine. She stretches her legs and wings as though in lazy enjoyment. The season has ended; her life-cycle is completed. She disappears. Who knows where?

"Many are called, but few are chosen." Beautiful prismatic green chrysidids prey on the babies of *Paralastor diadema*. When spring had thrown off the cold hand of winter, alas, only one alastorid emerged from the roughcast cluster of cells. In all the rest there is only a little dust, and the cocoons of the glorious Ruby-wasps.

Explanation of Plate

1. Lateral view of the adult female *Paralastor diadema* Raym.
2. The female works leisurely over her cluster of cells.
3. She stings the caterpillar and carries it off.
4. Graphic section of the cells with a larva; portion of the tough white skin is torn away. The small brown cocoon in the base is probably that of a small chrysid parasite.
5. A fully-fed larva in midwinter, and its thin amber cocoon, with two smaller cocoons of a parasite.
6. The "foot," and the pulvillus with which the wasp stands on the water.
7. The wings are deeply suffused with violaceous colour.
8. The acute mandible is adapted for breaking off clay.
9. Front of head-capsule of female: flagella and hairs of face not included.
10. The tips of the glossa are reinforced with two chitinous bosses; probably to take the "wear" of breaking coarse clay.
11. Each of the broad tarsal segments bears a ctenidium or comb.
12. The hamuli are numerous and strong, indicating a long range of flight.
13. The tegula bears a vestiture of loose golden hair, and immediately beneath it is a remarkable organ.
14. Strigilis of the anterior leg: the velum is excessively small.
15. Only one of the posterior calcaria is finely pectinate.
16. The caudal plate of the female; the wasp is quite hairy.
17. There are numerous fine hairs between the large punctures of the mesothorax.
18. One of the sternal plates of *P. bicinctus* Sm. has a long interior spine as in *Discoelius*.
19. Dorsal view of portion of the plate.
20. The ivory-coloured emargination of the clypeus of *P. emarginatus* Sauss.

THE TRAIL OF THE RUNNING POSTMAN

BY TARLTON RAYMENT, F.R.Z.S.

(Honorary Associate in Entomology, National Museum, Victoria)

That lovable old French naturalist, Jean Henri Fabre, drawing on the accumulated wisdom of his years, once advised us to "Keep looking in the right place, and you will surely be rewarded." Just so, but where, indeed, is the right place?

Among my correspondents is the Reverend Brother Stanley, who finds relaxation from the cares of teaching by wandering in the open fields, gleaning a little here and there of the Truth and the Beautiful in Nature. He is a modest man, passing on to me from time to time

any specimen which he considers deserves investigation at my hands. The hour inevitably arrives when the teacher finds himself looking in "the right place," and he is rewarded. So he hastens to send a small slender wasp, of graceful proportions; a handsome insect, one sure to attract the inquiring mind. First I must know her name. Well, she owes her title, *Discoelius*, to the Greek tongue, dis—double, and koilos—hollow, alluding to the two divisions of the abdomen; koilia—belly. Because my introduction to her was in the grounds of the college of a church, let us know her as *Discoelius ecclesiasticus*, sp. nov. And her aspect? Well, the poet-naturalist Fabre has written a graphic description that might well suffice for our purpose if we substitute orange for "yellow." "A wasp-like garb of black and yellow; a slender graceful figure: wings that are folded lengthwise in two; the abdomen a sort of chemist's retort, swelling into a gourd, and fastened to the thorax by a long neck which distends into a pear, and then shrinks to a thread; a leisurely, silent flight; lonely in habit." I should add that the glossa is extremely long for a wasp, and resembles that of a bee.

Of course I send a long letter, with a spate of questions that must bore the materialist to tears, but which are somehow welcomed by those who prefer the simple Truths of Nature before the blatant statements of the advertising world. Where did you find her? Was she visiting a flower? May I come out to observe the wonders for myself?

A day or two later I receive the reply—an invitation from the venerable Principal himself. "Of course you must come," he writes so graciously, that on a hot day in November, I find myself en route to an ecclesiastical seat of learning at Watsonia, in Victoria. The Seminary sits enthroned on the open landscape like a castle, commanding the rolling land that sweeps away, ever and ever into the misty distance, to where the blue ridge of the main Dividing Range strides down from its altitudes on huge serrated feet.

Alas! the Reverend Brother had moved on to a seminary in another State, but he had already plotted for me a neat sketch-map of the exact locality. "If you could go to the playing-field," he writes, "you will see that in the making of a level area for the games, it was necessary to slice off portion of a hill, leaving a sandy and somewhat stony wall or bank, some four feet or so in height. There you will find her nest!" Well, first I identify the hill. It is a splendid place for study, peaceful, and remote enough to shield me from the prying curiosity of the public, I muse there a little while; the sun beams down in all his glory—Many moons have passed since my brown brother of the rude Stone Age sat about on the hill, and chipped the native stones, but I can still discern fragmentary evidence of his ancient craft; his inimitable skill in flaking and modelling his few primitive tools.

An arrow of light shooting from the bank wakes me from my reverie. I search the "face" of the sand and stone and discover the portal whence the wasp had flown. This much is certain: The site of the nest is in the bank roasting under the summer sun. I await her return with eager anticipation. Soon she arrives, bearing a piece of leaf clasped between her forelegs. I am more than surprised. So, my slender red wasp cuts leaves like the leaf-cutter bee *Megachile*. I note that peculiar fact for future investigation, for members of her Family are famous modellers in mud. I do not, however, have to defer my study, for she is soon out again; back again. I match my patience against hers—

Her rapid return assures me that the source of her supply of leaves cannot be far away. I continue my search of the surroundings with meticulous care. By some odd chance a few plants of "Christmas Bush"¹ have escaped the maw of the excavator, and also the collisions

1. *Bursaria spinosa*.

of the scholastics at play. Perhaps the odd thorn or two helps to ward off other dangers.

However, the *Bursaria* is a hardy species, clinging to its native habitat long after its softer associates have succumbed to closer settlement. However, I find no evidence of cut leaves. During a constant vigil I learn that the wasps frequent the clusters of tiny cream blossoms for honey and pollen. Indeed, even the still more slender male sups there, and awaits his mate.

Today, however, I am not so much interested in the nuptials of the wasp as I am in discovering from which plant she pinkes her leaves. The *Bursaria* for food and drink, but not for leaves, that much is clearly evident. So I resume my search of the vicinity.

Of course, I wasn't looking in the "right place"—I have been holding my head too high. Under my feet, in amongst the tangle of dry grass, I find the object of my quest. Trailing here, trailing there, sometimes out of sight through a tussock, even round a stone, but more often just running over the hot dry ground. Partially hidden in the grass are the brilliant flowers of the "Running Postman."² I could never mistake the green eye of the flaming-red, pea-shaped flower.

Surely the wasp has no need to rifle the nectaries of the "Running Postman" since she has the favoured *Bursaria* close at hand. No, the blossoms do not attract her, it is the hairy green leaves that she is seeking. True, she does not pink them with either the skill or the artistry of the bee, for she is a rougher artisan, slashing off pieces of little symmetry, but it suffices for her simple needs. It is sufficient for me to learn that she cuts leaves, and why should I scorn her crude handicraft? For all I know, her rough architecture may be the enduring foundation upon which the beautiful arts of my *Megachile* have long been built by the subtle scaffold of evolution.

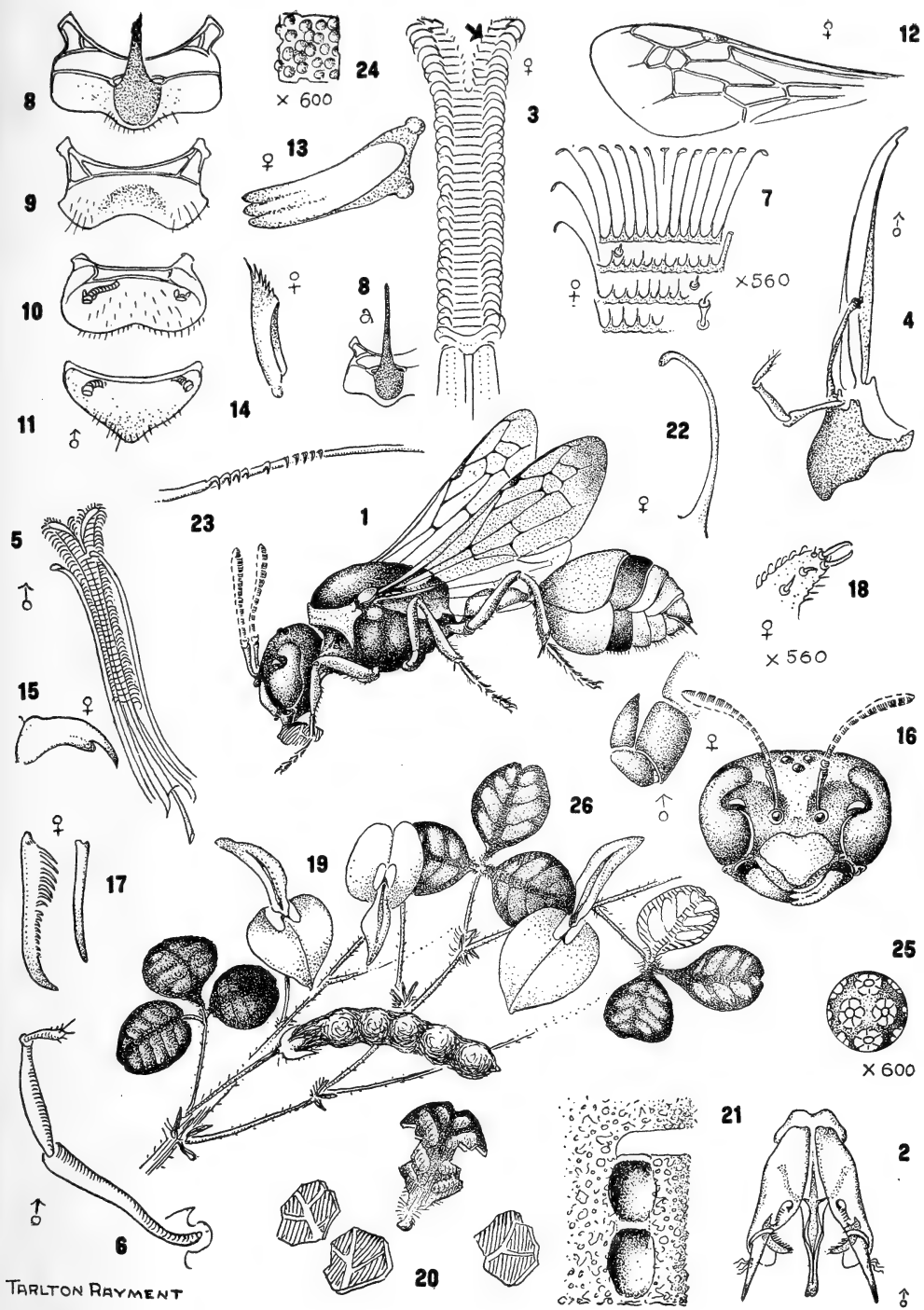
On excavating the nest, a circular plug was encountered half an inch in from the portal, beyond that point, the shaft turned down at a right-angle to the entrance. The plug barred the portal of the cells, and was comprised of leaves masticated into a kind of vegetable putty. There is no denying that a proportion of grits was incorporated in the mass, perhaps to give solidity to the structure. You see, there is no necessity for an artistic pinking of the leaves.

She will carry her ill-shaped pieces, clasped between her forelegs, to the sandy bank where she has delved out the traditional pattern of her family, two cells, one below the other. That is the architecture of the *Odyneri*. The cells are lined with a layer of mud, but the young will thrive, for a leafy division is warmer than an earthen plug; the leaves bestow a certain insulation.

"Are the baby wasps fed on honey and pollen from the Christmas Bush?" No, No, only the adults eat the vegetarian diet; the strength of the living meat is reserved strictly for the young. I do not know whether all *Discoelius* females feed their babies on caterpillars, for I have investigated too few nests. I do not know whether or not *Discoelius* confines herself to the one species of "Looper," but I suggest that the looper is her favourite baby-food. Brother Stanley counted the contents of four cells—eight, eleven, twelve, fourteen, every one a "Looper," that is, of the Family GEOMETRIDAE, insect travellers measuring off the yards of earth with a natural pedometer.

What of the egg? True to Family inheritance, the egg is attached to a fine filament, but in two of six cells the thread permitted the egg to rest on the leafy wad. "Isn't that anomalous for the *Odyneri*?" Yes, of course, but let us place the vertical cells on their sides. Behold, the

2. The name "Running Postman" is a childish fancy based on the red coat of the postmen of the early days. The scientific name is *Kennedya prostrata* R.B.



TARLTON RAYMENT

eggs would be suspended in the typical position. "What of the thread?" It is probably nothing more than an excessive elongation of the secretion that glues the bee's egg to the cell.

There are enemies a-plenty. Dark flies of the genus *Miltogramma* pursue the wasps a few inches to the rear like evil satellites. Beautiful green jewels, ruby wasps, CHRYSIDIDAE, haunt the nesting sites, awaiting a favourable moment to descend to deposit an egg on the fattened baby of the wasp.

I open a cell to observe the progress of the larva within. I am disappointed. There is no white baby present, only several small brown puparia to testify to the success of the parasitic Dipteron *Miltogramma*.

Explanation of Plate

1. Lateral view of adult female *Discoelius ecclesiasticus* Raym.
2. Genitalia of the male wasp.
3. The long glossa is unique for a wasp, and approaches very closely the elongate organ of the long-tongued bees.
4. The maxilla is slender, and the palpus appears to have only three segments.
5. The deeply emarginate glossa of the male, and the exceedingly tenuous paraglossae.
6. Maxillary palpus much enlarged.
7. Portion of the glossa more highly magnified to show arrangement of the curled setae. Note the minute organs.
- 8, 9, 10, 11. Apical sternal plates of the male abdomen; the fourth sternite had a long spine on the internal surface. It is similar to *Paralastor* (See 8a).
12. Posterior wing of the female.
13. Mandible of the female is tri-dentate.
14. Strigilis of the anterior leg of the female.
15. Tarsal hooklet of the anterior leg of the female.
16. Front of the head-capsule of the female.
17. One hind calcar is pectinate; the other is simple.
18. Organs at extreme tip of the female glossa.
19. Trifoliate leaves and flowers of the "Running Postman" (*Kennedya prostrata*.)
20. One of the leaves and the asymmetrical pieces cut by the wasp.
21. Section of the bank to show the two cells.
22. One of the setae of the female glossa.
23. Hamuli of the posterior wing of the female.
24. Tuberculate area of the inner surface of glossa (See arrow No. 3).
25. Spherical grains, symmetrically sculptured, were removed from a female taken at Watsonia in March, 1945. Similar grains were taken from a male collected at Broadmeadows in January, 1910, by F. Spry. The pollen-grains from *Kennedya* are elliptical.
26. Two apical segments of male flagellum are small and recurved. (There is some distortion of the parts due to pressure by the cover-glass.)

NEW LOCALITY RECORDS FOR SOME AUSTRALIAN FISHES

BY GILBERT P. WHITLEY, F.R.Z.S.

Contribution from The Australian Museum, Sydney.

(Figures 1-5)

Partly as a result of field work but mainly through identifying many fishes acquired during recent years by the Australian Museum, I have come across the following species which are either new to the Australian fauna or unrecorded from certain States of the Commonwealth.

1. New Records for Australia.

Choerofulius gymnocephalus (Bloch & Schn.). Green Id., Queensland (Austr. Mus. regd. No. IB.3119).

Dischistodus notophthalmus (Blkr.). Green Id., Q. (IB.3115).

Enchelyurus flavipes (Peters). Lady Musgrave Id., Q. (IB.2873, part).

Ctenochaetus strigosus (Bennett). Between 17° and 19° S. lat., Great Barrier Reef, Q. (IA.2135).

Herreolus formosus (Smith). Heron Id., Q. Under slabs of sandrock, April, 1953. Mr. F. A. McNeill (IB.2958). This species was also collected by A. R. McCulloch in the New Hebrides (IA.769).

Chaetodon guntheri Ahl. Off Byron Bay, N. S. Wales (IB.2473).

Pseudomonacanthus macrurus (Bleeker). Cape York, Q. (I.469).

Family CHROMIDAE.

Genus CHROMIS Cuvier, 1814.

CHROMIS HUMBUG, sp. nov.

(Figure 1.)

D. xii, 13; A. ii, 13?; P.c. 17. L. lat. 15 tubes. Sc. 25 to hypural. Tr. 3/1/9.

Head (6mm.) 3, depth (9) 2 in standard length (18). Eye (2.7) 2.2 in head and subequal to depth of caudal peduncle and to second anal spine. Anterior profile angularly pointed, a dip over eye before predorsal convexity. Preoperculum with incipient serrae, other opercles smooth. Mouth small, reaching third of eye. Teeth small, conic, not flaring outwards. Mandibular ramus not steeply ascending. Head scaly, except snout, mouth, and chin. Two rows of cheek-scales.

No. 1. lat. on tail, the tubes ending $1\frac{1}{2}$ scale-rows below posterior dorsal spines. No auxiliary scales.

Middle dorsal spines longer than the second one. Fin lobes all pointed, longest upper caudal ray equals head-length. Dorsal and anal fins naked, apart from basal scales. Caudal forked, without free spines.

General colour creamy-white, with two broad blackish bands; the first from above eye and nape towards lower parts of head which are black-dotted, the second descending from 4th to last dorsal spines and membranes towards vent. Faint grey stripe along each scale-row. Viscera and upper parts of body infuscated. Eye blue. Pectoral axil white. Fins mostly white; caudal without dark margins. Anterior anal and ventral margins dusky.

Described and figured from the unique holotype, 18mm. in standard length or 0.9 inches long (Austr. Mus. regd. No. IB.3116).

Loc.—Green Island, off Cairns, Queensland.

Differs from its allies notably in coloration, which is dark and light barred, like the fishes, known as "humbugs," in the related genus *Tetradrachmum*.

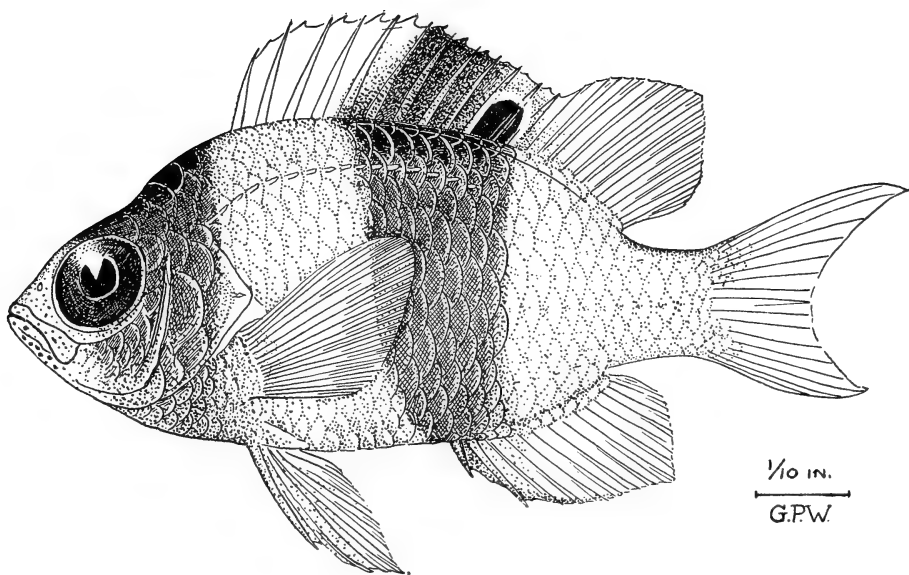


Figure 1.—Two-barred Demoiselle, *Chromis humbug* Whitley. Holotype.

Family ATHERINIDAE.

Genus ATHERINOSOMA Castelnau, 1872.

ATHERINOSOMA ROCKINGHAMENSIS Whitley.

(Figure 2.)

Atherinosoma rockinghamensis Whitley, Proc. Linn. Soc. N. S. Wales lxxviii, Sept. 15, 1943, p. 132.

This species was discovered by the late George Grigg in a brackish or freshwater, landlocked lagoon, near Rockingham, south-western Australia. It is here figured for the first time from the holotype (Austr. Mus. regd. No. 1A.7710), which has the following characters: D.v/10; A.i,10; P.14 (3rd longest). Sc. 38 Tr. 7 to $4\frac{1}{2}$ on caudal peduncle. Predorsal 14, interdorsal 7 scales. Dark lateral stripe along 4th scale-row. About 14 slender gill-rakers on lower half of first branchial arch; longest about half eye and subequal in length to premaxillary processes.

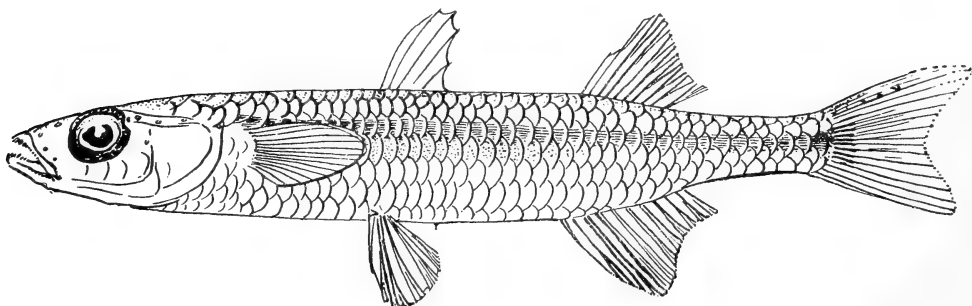


Figure 2.—Hardyhead, *Atherinosoma rockinghamensis* Whitley. Holotype.

Family SYNGNATHIDAE.

CHOEROICHTHYS SUILLUS MALUS, subsp. nov.

D.20. Rings 17 plus 15; subdorsal $2\frac{1}{2}$ plus 2. Antorbital crests and median ridge of snout serrated. Spines of posterior tail-rings each with more than one point. Brown, head with blackish stripes. Caudal fin large, its outer and median rays cream, others dark brown. $2\frac{1}{2}$ in. long. Otherwise as in *C. suillus suillus* Whitley (Rec. Austr. Mus. xxii, 1951, p. 393, fig. 2). Holotype of new subspecies (No. I.7154) in Australian Museum from Masthead Island, Queensland.

Family EPINEPHELIDAE.

EPINEPHELUS SUMMANA HOSTIARETIS, subsp. nov.

D. xi, 15 or 16; A. iii, 8 or 9; P. 16. L. lat. about 63 to hypural.

Three rows of teeth at sides of mandible. Gill-rakers short, 9/20 on first arch. Caudal rounded. Pale green or light brown, mostly covered by a network of darker brown wavy markings. Some light round spots on unpaired fins which are narrowly margined white. A black "moustache" mark. About 13 in. Queensland. Differs in scale-counts, etc., from typical Red Sea *summana* (Bonnaterre, 1788).

Family STIGMATONOTIDAE, nov.

A new family name for *Stigmatonotus australis* Peters, 1877, (figure 3), which has usually been placed in Pseudochromidae, but it differs in having a shorter body, maxillary large and scaly and extending below eye, preopercle denticulate, and eleven dorsal spines, instead of only two or three.

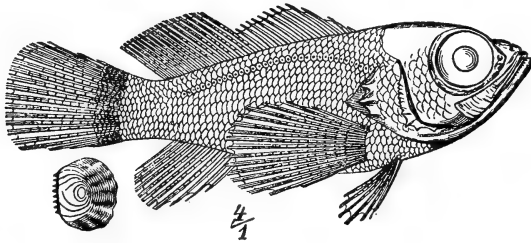


Figure 3.—Dottyback, *Stigmatonotus australis* Peters. Holotype from Dirk Hartog Id., W. Australia. After Peters.

Family GOBIIDAE.

Genus CTENOGOBIUS Gill, 1858.

YOGA, subg. nov.

Orthotype, *Ctenogobius* (*Yoga*) *pyrops*, sp. nov.

Differs from *Amblygobius* in having upper lip not covered and in coloration and formulae. Has larger teeth and fewer scales than *Cryptocentroides*. Scales more numerous and caudal rounder than *Amoya*. The number of scales is higher than in most *Ctenogobius* spp. and lower than in *Cryptocentrus* spp. The goby described below is apparently intermediate in characters between the genera mentioned (for refs. to literature, see Neave, Nomencl. Zool., or recent reviews of Gobiidae), linking them together, so I suggest the new subgeneric name, *Yoga*, meaning yoke, for it. The squamation (about 55 transverse series of scales) and the pear-shaped orbits are useful diagnostic features.

CTENOGOBIOUS (YOGA) PYROPS, subgen. et sp. nov.

(Figure 4.)

D. vi, 12; A. 11; P. 16; V. i, 5; C. 13 main rays. Sc. c. 55. Tr. c. 22, at second dorsal and anal, to $8\frac{1}{2}$ on caudal peduncle. No predorsal scales (except in young).

Head (21 mm.) 3.7, depth (16) 4.9, breadth of body (12) 6.5 in standard length (78). Eye, 4 mm.; snout, 6; postorbital, 12; interorbital, 3.2; depth of caudal peduncle, 10; depth of gill-opening, 11; predorsal length, 24.

No ocular tentacle or nuchal crest, barbels or fleshy flaps. Head rather tumid and bulbous; profile convex. Head, pectoral base and much of breast naked. Rows of minute genipores. Upper lip exposed; lower jaw slightly jutting; tip of maxillary ensheathed; mouth barely reaching below front of eye, not opening widely. Teeth of both jaws in several rows, the outer of which is enlarged with conic teeth, largest anteriorly and halfway along sides of lower jaw where the canines cease. Tongue rounded, not notched. Interorbital tumid, with one central pore, followed by another in the median line. Anterior nostril with short tube. Groove from eye to top of opercle. Chin transversely folded. Eyes mostly in anterior third of head, pyriform, apex towards interorbital. Isthmus broad.

Form rather rounded in transverse section and slightly compressed. Scales ctenoid. Anal papilla small. Dorsal spines slender, the sixth separated from the group of the first five, third longest (14 mm.). Dorsal bases contiguous. Anal rays fringed. No silky pectoral rays. Ventrals not reaching vent, united like those of *Gobius*. Caudal irregularly rounded, shorter than head.

Colour in formalin, pale yellow with indistinct small light brown patches along back (six double patches each side of dorsal fins) and along midline of sides. A few short grey bars on opercle, which has a diffuse blue patch. Eye blue. Dorsal with brown spots and flecks; few dark spots on first dorsal spine. Anal infuscated brown, with pink margin. Fins mostly pale.

Described and figured from the holotype, a specimen, $3\frac{1}{4}$ inches long, from Karumba, Gulf of Carpentaria, Queensland (Assistant Pilot Anton de Witte, 1953) Dept. Harbours & Marine, Brisbane collection, regd. No. 3074.

The Australian Museum has two much smaller paratypes (No. IA.3756) collected by Mr. Melbourne Ward at Thursday Island, Queensland. They are 45 and 59 mm. long. They have five conspicuous dark blotches along middle of each side; the posterior dorsal and upper caudal rays are dark-spotted; and there are some predorsal scales but they are difficult to distinguish.

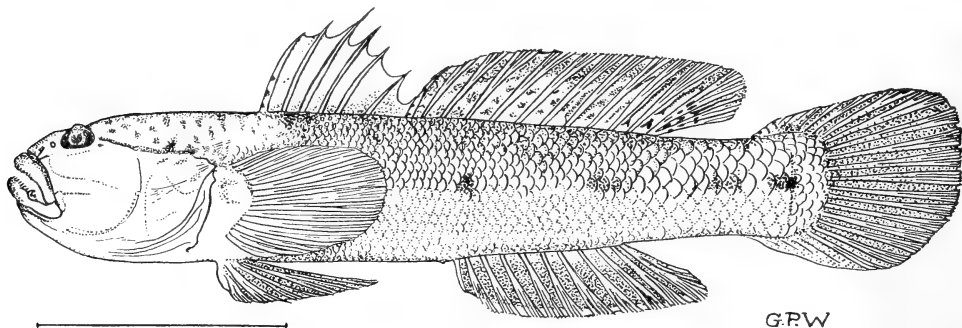


Figure 4.—Goby, *Ctenogobius (Yoga) pyrops* Whitley. Holotype.

This new goby comes at the bottom of McCulloch & Ogilby's key (Rec. Austr. Mus. xii, 1919, p. 205) which may be thus modified:

zz. Nape naked.

1. Less than 10 anal rays, less than 50 scales.

Freshwater, Central Australia *Chlamydogobius eremius*

2. More than 10 anal rays, more than 50 scales.

Marine, tropical *Ctenogobius (Yoga) pyrops*

Ctenogobius culionensis Herre (Fish. Zool. Mus. Stanford i, Herre Exped., 1934, p. 84) from the Philippines has Sc. 56 and Tr. 24, but only 8 anal and 9 dorsal rays, and the maxillary extends beneath middle of eye. Typical *Ctenogobius (fasciatus* Gill) from Trinidad has tongue emarginate, eye more than $\frac{1}{4}$ head, space between dorsal fins equal to orbit, and longer pectoral fins.

2. New Records for the Northern Territory.

When I was aboard the M.V. "Stanley Fowler" seeking tuna for the C.S.I.R.O. Division of Fisheries in 1949, some of the following were incidentally caught.

Triaenodon apicalis Whitley. Evans Shoal, Arafura Sea, 6 Oct. (IB.2546).

Elagatis bipinnulatus (Quoy & Gaimard). Lynedoch Bank, 5 Oct.

Paradicichthys venenatus Whitley. Evans Shoal, 6 Oct.

Indocybium semifasciatum (Macleay). Between Darwin and Point Charles, 20 Sept. to 1 Oct. Mature males, L.C.F. 584 to 761mm.

Cybium queenslandicum (Munro). Near Parry Shoal, 5 Sept.

Evenchelys macrurus (Bleeker). Darwin (IA.7713).

Uropterygius concolor Ruppell. Yirrkala (IB.480): figure 5.

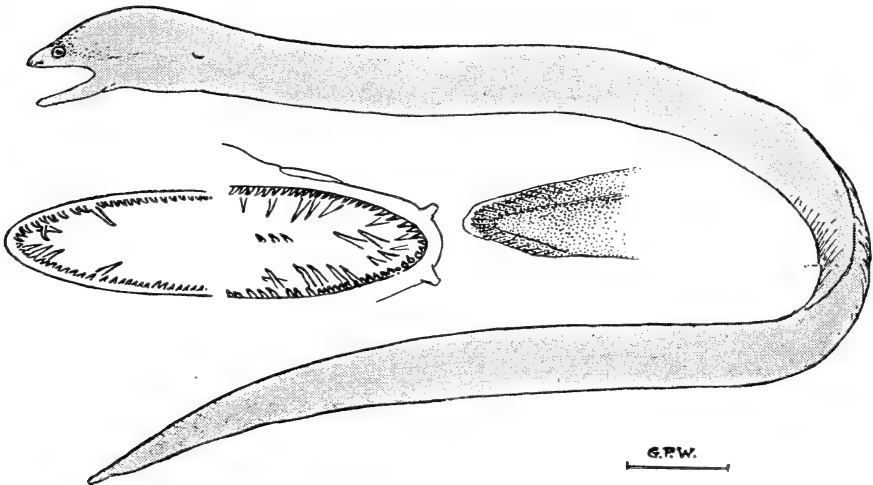


Figure 5.—Eel, *Uropterygius concolor* Ruppell. A specimen from Yirrkala, with (inset) its dentition (left) and tip of tail (right).

Saurida undosquamis (Richardson). Charles Point and Croker Island (IA.7712 and I.12570).

Choeroichthys serialis (Gunther). Port Darwin (IB.4401).

Amneris rubrostriata (Ramsay & Ogilby). Yam Creek (A.4819), Howard Creek (IA.7727-7729) and Mataranka (IB.1934-1938).

Sillago analis Whitley. Melville Island (IB.648).

Megalaspis cordyla (Linne). Near Peron Islands, in stomach of *Cybium* (self) and English Company Islands (photo from Mr. Eric Worrell).

The commonest tuna was *Euthynnus alletteratus* (Rafinesque) in the Timor Sea, and *Katsuwonus pelamis* (Linne) was taken near Sahul Bank.

Aprion virescens placidus Whitley. Timor Sea, 6 Oct. 1949.

Lutjanus coatesi Whitley. Sahul Bank, Lynedoch Bank, Evans Shoal and Flinders Reef, Sept.-Oct. 1949.

Batrachomoeus dahli (Rendahl). Cape Bedwell and Melville Island (IA.7847 and 7856).

Abcichthys praepositus (Ogilby). Darwin (IA.2487).

Antennarius asper Macleay. Darwin (IB.2419).

3. New Records for Queensland.

Besides the fishes new to Australia listed above, I note the following.

Amphiprion melanopus Bleeker. Green Id. (IB.3114).

Graviceps alexanderi Whitley. Masthead Id. (I.7117-8) and Two Isles (I.14029).

Xiphias setifer Swainson. Dunk Id. (I.12500).

Scorpaenopsis diabolus (Cuv. & Val). Heron Id. (IB.2975).

Urocampus carinirostris Cast. Southport and Port Denison (IA.7366, 1808).

Hirundichthys katoptron robustus Gunther. Off Rockhampton (IA.3608).

Devisina wilsoni (Whitley). Whitsunday Passage (IA.918).

Ostreogobius microphthalmus (Gunther). Southport (IA.7393-7394).

Paratrigla papilio (Cuv. & Val.). Off Pine Peak, 24 to 26 fathoms, 1st Oct. 1910 (E.2847).

Pterophrynoides histrio (Linne). Near Cooktown (I.7719).

Some of these Queensland fishes were recently collected by Mr. F. A. McNeill when with Colonel J. K. Howard, who was collecting for American museums. I am grateful to Col. Howard for affording me an opportunity of examining many of his Australian specimens before they were shipped and for presenting to the Australian Museum examples of special note.

4. New Records for New South Wales.

Thrissina aestuaria (Ogilby). Grafton (IB.2765).

Polydactylus specularis (De Vis). Grafton (IB.2764).

Polyprionum oxygeneois (Bl. Schn.). Off Beecroft Head, 60 to 80 faths., 19 Aug., 1953 (IB.3134).

Caranx papuensis All. & MacI. Trawled near Sydney, 6 July, 1948 (IB.2151).

Velifer multiradiatus Regan. Off Norah Head, 40 to 50 faths. (IB.2870).

Allotaius spariformis (Ogilby). Nambucca Head, 2 July, 1953 (IB.2987).

Glyphisodon palmeri Cockerell. Bunnerong, Botany Bay, 12 Jan., 1949 (IB.2208).

Scarichthys auritus Cuv. & Val. Clarence River.

Salarias atratus Macleay. Clarence River (IB.608).

Cyttus mccullochi Whitley. Bermagui, 8th Jan. 1954. 22in., 6lb. (IB.3152).

Parioglossus rainfordi McCulloch. Gundamaian, Port Hacking (IB.12).

Forcipiger longirostris (Broussonet). Maroubra, 14th Oct. 1954 (IB.3160).

Ferdauia lindemanensis Whitley. Malabar (IB.2920).

* *Auzis thynnoides* Bleeker. Newcastle (IB.1804).

Cantherines brunneus (Cast.). Coff's Harbour (IB.1695).

Antennarius tuberosus (Cuvier). Near Terrigal.

5. New Records for Western Australia.

Amentum carpentariae (De Vis). Off Tubridgi Creek, North-West Cape (IB.3085).

Caranx bucculentus All. & MacI. Off Tubridgi Creek, North-West Cape (IB.3081).

Gazza dispar (De Vis). Off Tubridgi Creek, North-West Cape (IB.3083).
Equulites moretoniensis (Ogilby). Off Tubridgi Creek, North-West Cape (IB.3084).
Equulites hastatus (Ogilby). Hampton Harbour, Dampier Archipelago (IB.3070).
Scolopsis regina Whitley. Hampton Harbour, Dampier Archipelago (IB.3071).
Parachaetodon ocellatus (Cuv. & Val.). Hampton Harbour, Dampier Archipelago (IB.3055 and 3094).
Phrynelox striatus (Shaw & Nodder). Wallabi Island, Abrolhos; April, 1949 (IB.2330).
Siphamia cuneiceps Whitley. White Island, Shark's Bay (IB.3044).
Hypodytes carinatus (Bl. Schn.). Exmouth Gulf (IB.3005).
Tetraroge leucogaster (Rich.). Exmouth Gulf (IB.2984).
Moolgarda delicata (All. & MacL.). Cygnet Bay (IB.2629) and Depuch Island (IB.2637).

Asterropterix semipunctatus (Ruppell). Western Australia (I.13268).
Polydactylus specularis (De Vis.). Exmouth Gulf and North-West Cape (IB.3008, 3012, 3013 and 3089).

* *Zenarchopterus dispar* (Cuv. & Val.). Depuch Island (IB.2640).

Epinephelus forsythi Whitley. Scott Reef (IB.2633).

Aprion virescens placidus Whitley. Woodbine Bank (IB.2634).

Mr. K. Godfrey kindly collected most of the above Westralian specimens as well as many other better-known fishes, during surveys with prawn-trawls in north-western Australia aboard M.V. "Lancelin" in July to Sept., 1952. The four last-named were submitted by Dr. D. L. Serventy, also on behalf of C.S.I.R.O., after the M.V. "Warreen" cruise 35 of 1949.

6. New Records for South Australia.

Cyneichthys anolius (Cuv. & Val.). Chinaman Creek, south of Port Augusta (S.A. Mus. F.2645). 3½ in. long.

Paraploactis trachyderma Bleeker. Near Cape Jervis, 11 faths., weedy bottom (F.2659).

Plectroplites ambiguus (Richardson). Diamantina River, near Clifton Hills (H. M. Hale, in lit., Jan. 1936).

Emmelichthys nitidus Richardson. In shoals off South Neptune Island, Nov. 1948.

Navodon australis (Donovan). From stomachs of tunas.

7. New Records for Victoria.

Trudis caeruleopunctatus (McCulloch). Portarlington (IB.2119-20).

Galaxias tongbong Macleay. Near Albury, Murray River (IB.2763).

Argentina elongata Hutton. Seined off Port Phillip, March 1949 (IB.2345).

Xiphias estera Philipps. Frankston, Port Phillip, Nov. 1950.

Genypterus microstomus Regan. Trawled 70 to 100 fathoms, off Cape Everard (I.12138).

Lepidotrigla modesta Waite. 70 to 80 fathoms, off Cape Everard (IA.3903).

Tetragonurus cuvieri Risso. Off Gabo Island, 88 faths. Nearly 20 in. long, early March 1952 (IB.2772).

8. New Records for Tasmania.

Mora dannevigii Whitley. Bass Strait to south-eastern Tasmania; deep water.

Xiphias estera Philipps. Stranded, East Inlet, Stanley, April 1952 (Miss Maude Leggett, in lit., 20 June 1952).

Cochleocephalus spatula (Gunther). Wineglass Bay (I.13005) and on kelp, Oyster Bay (I.10410).

Arenigobius bifrenatus (Kner). West Arm, Tamar River (IB.1980).

Paratrigla papilio (Cuv. & Val.). Dredged, D'Entrecasteaux Channel (IA.4103-4).

I wish to thank donors of specimens who have made the above records possible.

Family ELEOTRIDAE, auctt. = GOBIOMORIDAE,
SHIPWAYIA, Whitley, 1954.

Orthotype, *Eleotris aurea* Shipway (W.A. Nat. ii, 4, May 17, 1950, p. 75, figs. 1-2. Murchison R., W. Australia) = *Shipwayia aurea*.

A new generic name (Whitley, Austr. Mus. Mag. xi, 5, 1954, pp. 152 & 155, fig. 1) was necessary for this species which has been well described and figured by Bruce Shipway, after whom I name it.

Eleotris Scopoli (Intr. Hist. Nat., 1777, p. 456) was the first latinization of Gronow's non-binomial name and the genotype, by tautonymy, is *Gobius eleotris* Linne (Syst. Nat. x, 1758, p. 263), a Chinese species in which, according to Osbeck, "the ventral fins have eight rays, and are joined together into one infundibuliform fin"—yet modern authors use *Eleotris* for gobies with separated ventral fins. Hence *Eleotris* is one of the Gobiidae and Eleotridae should be renamed Gobiomoridae.

In McCulloch & Ogilby's key to the genera of "Eleotrinae" from Australia (Rec. Austr. Mus. xii, 1919, pp. 257-258) *Shipwayia* comes into section "jj. Interorbital space naked," which may be modified as follows:

1. Scales 37-40. Body moderately elongate *Gobiomorphus*
2. Scales 45-50. Body deeper, nape humped *Shipwayia*
3. Scales 27-35 *Carassiops*

Incidentally, the following synonymy is suggested:

Eleotris adspersa Castelnau, 1879 = *Mogurnda pallida* (Cast. 1875).

Family ANOSTOMIDAE.

STUPENS, gen. nov.

I take this opportunity to propose a new name for *Camposichthys* Whitley (Rec. Austr. Mus. xxiii, 1953, p. 134) preoccupied by Travassos (Summa Brasil Biol. i, 9, 1946, p. 132) for another genus of fishes.

Orthotype, *Stupens simulatus* (Eig. & Eig., originally *Curimatus*).

Family ONEIRODIDAE.

BERTELSENNA, gen. nov.

Orthotype, *Dolopichthys gladisfenae* Beebe (Zoologica xiii, 4, 1932, p. 86) = *Bertelsenna gladisfenae*.

New name for *Spiniphryne* Bertelsen (Dana Rept. 39, Dec. 18, 1951, pp. 72, 75 & 122) preoccupied by *Spinophrynus* Koch (Atti Soc. Ital. Sci. Nat., 90, 1951, p. 90), a genus of Coleoptera.

SUPPLEMENTARY NOTES ON GOBIES

BY LILY IVEY

In the *Proceedings* of this Society for 1949-50 (1951, pp. 55-57), particulars of the habits of some gobies (*Waiteopsis paludis* Whitley) in captivity were reported. Here are some further observations.

On 31st June, 1951, I noticed two baby fish, like tiny threads of grey silk in the aquarium; I removed the few snails in case they might help to destroy other eggs. However, no more little ones arrived, and the two continued to grow well for some eight months, when one disappeared—the body was never found. The other is now (31 March, 1953), full-grown and vigorous, in all respects like his forbears. Until he was about a year old he stayed most of the time under the "rocks," but now he swims gaily and rests across the weed as the others do. Up to six months ago he remained dark in colour; now he is sometimes a sandy grey. I have never seen him leave the water or blow bubbles, in fact all of them have stopped doing those things and behave like ordinary freshwater fish.

No more little ones have appeared so far—better luck in the future perhaps.



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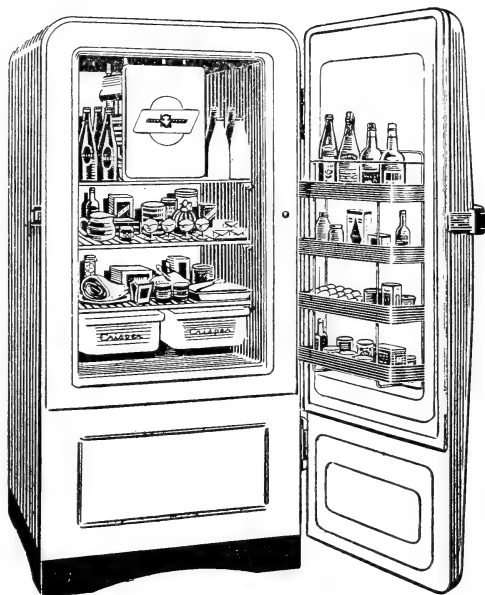
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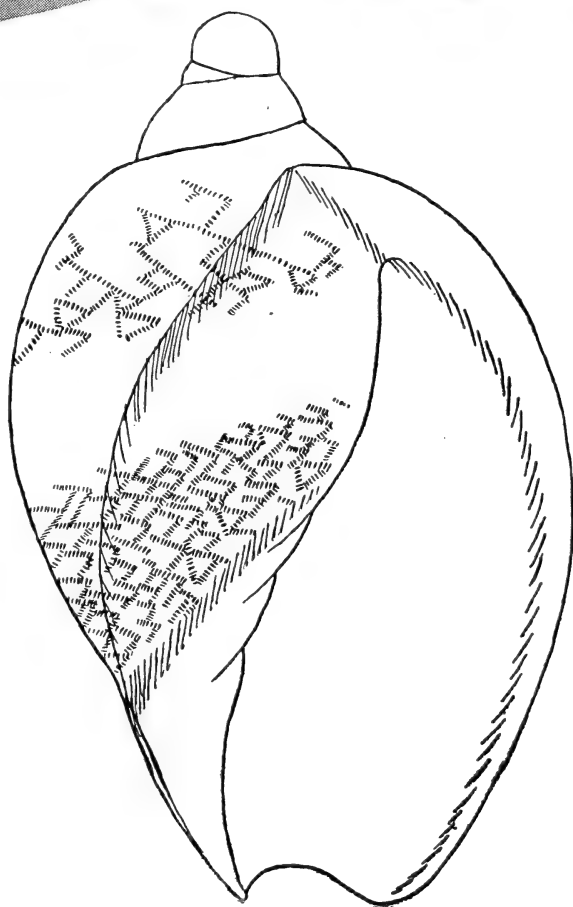
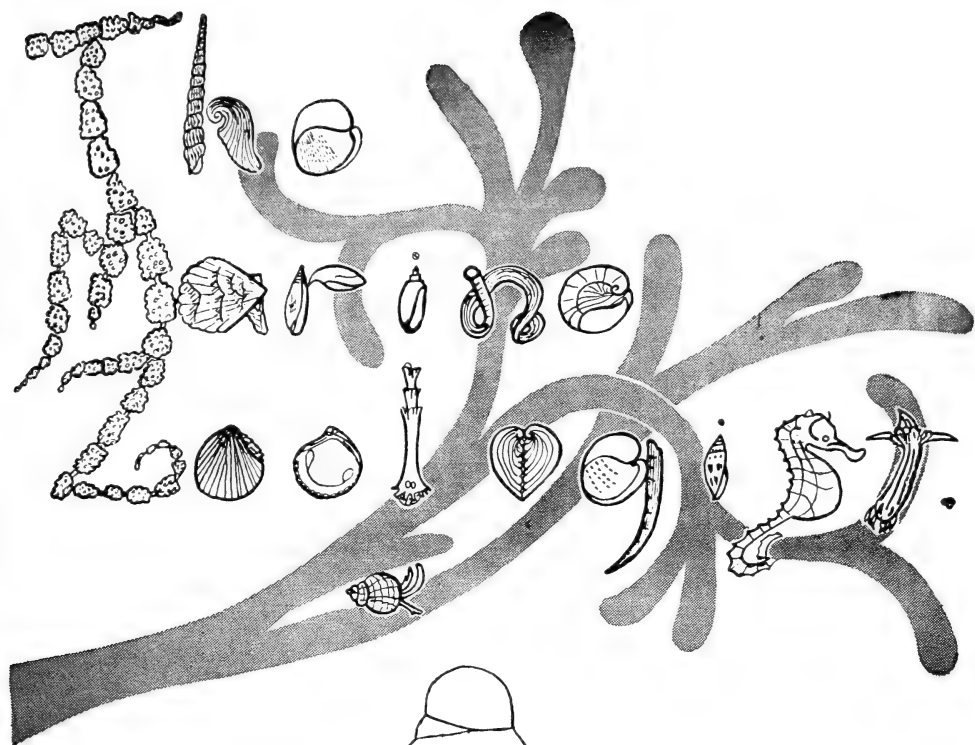
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"THE MARINE ZOOLOGIST"

VOL. 1. No. 2

(Incorporated with the Proceedings of the Royal Zoological Society of New South Wales, 1952-53)*

Additions to the N.S.W. Check List

(Plate I, figs. 1-5, 7 and 9)

This year the Conchology Club of the Marine Zoological Section has undertaken a review of the N.S.W. Gastropod List, which will be duplicated for our own use only. In the course of this work it became clear that members had in their collections species not previously recorded from this State.

These will be verified, recorded in subsequent issues of this paper, and specimens will be handed to the Australian Museum, so that they will be available to future students of the subject.

In this issue I would like to record the following species:—

Elegidion ticaonica Reeve (Plate 1, figs. 7, a, b). This was found by myself at Angourie, near Yamba. It is a finely latticed white shell about 10mm. by 7mm. The steeply raised apex is slightly towards one end, and the orifice is very small, shaped like a circle with an oval extension towards each end.

Bivona constrictor Morch (Pl. 1, fig. 9). This shell was recorded by Hedley (Proc. Linn. Soc. N.S.W. 1913) as from Northern Australia. It has been found by Messrs. C. & J. Laseron in Port Jackson.

Morula anaxeres Kiener (Pl. 1, fig. 1). I have this shell from Angourie and Iluka, near the Clarence River, and Mr. Laseron has it from Woolgoolga. It is rarely much over $\frac{1}{4}$ inch long, with white pustules on a darker ground. Sometimes it shows distinct bands of chocolate or black between rows of white nodules.

Morula biconica Blain. (Pl. 1, fig. 2). Was taken alive by me at Ballina, I also have it from Iluka. The mouth is extended to a point at the anterior end. The shell is 13mm. in length, almost diamond shape with sharply conical apex. It is ridged longitudinally, ridges being crossed by fine striae. Colour in life is dull greyish, with bluish purple mouth.

Morula margariticola Brod. (Pl. 1, fig. 3). Found by myself at Angourie and Iluka, and by Mr. Laseron at Woolgoolga. It grows to a larger size than the specimen figured (12mm. by 9mm.) and is a uniform black with a purplish mouth.

Morula ochrostoma Blain. (Pl. 1, fig. 4) is a uniform white colour, longitudinal ridges bear prominent tubercles where they cross finer transverse striae. Aperture white or yellowish. The length is $\frac{1}{2}$ inch. My specimens are from Woody Head, Iluka.

Morula uva Bolten (Pl. 1, fig. 5). Mr. Laseron has specimens of this shell from Woolgoolga, and I have one from Iluka also. *M. uva* is white with rows of dark tubercles which are separated by a single spiral ridge. The mouth is a light violet, strongly denticulated. 15mm. by 9mm.

Other shells will be added in later issues of this paper, when we have had time to study or identify them. I feel that in undertaking this work our members are making a real contribution towards scientific progress in zoology.

GERTRUDE THORNLEY,
(Sub-Editor).

* Volume I, No. 1 of "The Marine Zoologist" appeared with the Proceedings of the Royal Zoological Society of New South Wales 1951-52, published November 5, 1952; volume I, No. 2, here presented, was published May 24, 1954.

Some Helmet-Shells (Cassididae) From My Collection

(Plate 1, figs. 6 and 8)

BY GERTRUDE THORNLEY

Two years ago I received from Mrs. Lowery of Tuncurry a remarkable Helmet Shell which she had picked up on Tuncurry Beach after a gale. When I showed it to Mr. Tom Iredale he immediately identified it as *Casmaria perryi* Ire. (Pl. 1, fig. 8) which he had discovered in the Kermadec Islands. We immediately compared it with his figure in the Proceedings of the Malacological Soc. of London (x, 1912, p. 227, pl. ix, fig. 17) and confirmed this identification. The one before me is therefore the first specimen of this shell yet to be found in Australia.

It is a glossy yellow shell $1\frac{1}{2}$ inches long by $\frac{7}{8}$ inch wide, with a blunt apex. It has five adult whorls, mottled with chestnut at the sutures, with four bands of square light brown spots on the body whorl. The columellar and lip are white. Compared with *C. vibex* or *C. erinacea*, its nearest relations in Australia, this lip is only slightly thickened, not extended as they are into a heavy fold. The interior is light brown.

While at Eden, I collected a specimen, trawled off Tathra in 10 fathoms, of *Antephalium semigranosum* Lam. so this species may also be added to the N.S.W. Check List. It has so often been illustrated and is so well known, that I do not include a figure here.

From Mr. Knight of Sinclair Bay, Gloucester Island, near Bowen, Queensland, I received a fine shell which differs on sight from *Xenogalea angasi* Iredale (Rec. Aust. Mus. Vol. XV, No. 5, 1927, p. 350, pl. xxxii, fig. 15) of which it is a sub-species.

I describe it here as follows:—

Xenogalea angasi knighti, sub-species nov.

(Pl. 1, fig. 6)

Shell small, roundly ovate, thin, spire acuminate, and slightly shorter than that of *angasi*; mouth ovate; a protoconch of two and a half whorls; four adult whorls, the first two cancellate, less heavily so than *angasi*, and more rounded; on penultimate whorl are three fine ridges, the lowest hardly to be seen even with a glass. The body whorl is smooth and more rounded than that of *angasi*.

Colour a pale pink with a few slight brown blotches at the suture on the body whorl, yellow on back of recurved edge.

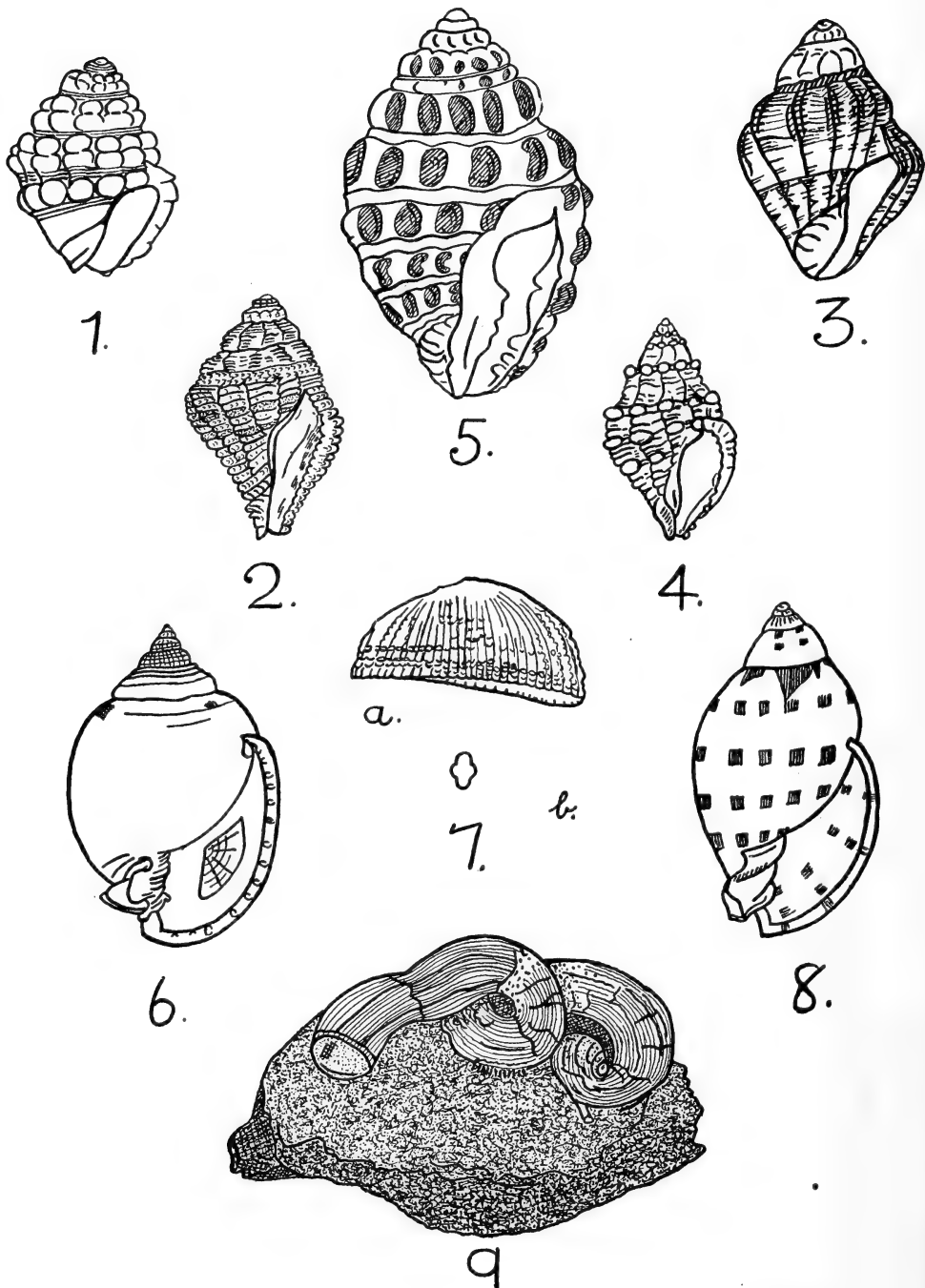
The canal and columellar are like that of *angasi*, with the characteristic double twist wrinkled throughout.

The shell differs in colour, and it is more rounded and not shouldered while it is smoother everywhere, and the ridging and cancellation of the upper whorls are less prominent.

The operculum is narrowly fan shaped, pale horn coloured and translucent. DIMENSIONS: L. 40mm., B. 25mm.

HABITAT. "Sandy flats exposed to strong tidal currents, and only uncovered by a minus tide, Gloucester Passage. "The animal," Mr. Knight says, "is similar to that of *Phalium glaucum*. It burrows deeply (4in. to 6in.) and is seldom found dead." I must thank Mr. Knight warmly for the above data, and for the specimens he has made available to me. It is indeed providential that so keen and observant a collector should be living in such an interesting place, and I hope that further species may be found there. The holotype will be presented to the Australian Museum, also specimens of the other shells mentioned in this article. I would like to thank Mrs. Lowery, who has sent me many fine shells from Tuncurry, and Mr. Iredale for the help he so freely extends at all times.

Plate I.



(Explanation on next page)

Explanation of Plate I

Gastropod Shells from New South Wales and Queensland.

1. *Morula anaxeres*.
2. *Morula biconica*.
3. *Morula margariticola*.
4. *Morula ochrostoma*.
5. *Morula uva*.
6. *Xenogalea angasi knighti*.
7. *Elegidion ticaonica*.
8. *Casmaria perryi*.
9. *Bivona constrictor*.

G. Thornley del.

Albinism in Volutes

(Plate II)

BY NATASHA JACKSON

Melo amphora knighti, subsp. nov.

Last year I was able to send a specimen of *Livonia mamilla leucostoma* Mayblom to my friend, Mr. Charles Knight, Sinclair Bay, Gloucester Is., near Bowen.

He was delighted and wrote a letter of appreciation, adding cryptically, that he hoped one day to be able to reciprocate in a like manner.

I was mystified at the time, but this year he sent along two specimens of *Melo amphora* which had the same marked albino characteristics distinguishing *Livonia mamilla leucostoma*.

Hence, if *Livonia mamilla leucostoma* Maybloom, *Umbilia hesitata howelli* Iredale and *Zoila thersites contraria* Verco, have been given sub-specific rank, I think that the albino of *Melo amphora* (Solander) which exhibits similar differential features may also be given sub-specific rank.

Mr. Knight was also good enough to provide very interesting data concerning this shell. He writes:

"I do not know of any specimens other than those collected by me.
Habitat:

All specimens taken, have been found early in the collecting season, i.e. May-June, in sandy recesses of coral reefs, at the extreme edge of the tide or even beyond, at low spring tides that would give an approximate depth of 12 to 18 feet below water.

The reef here dips sharply at a little distance beyond low water, to a depth of about 7 fathoms.

This would suggest that, unlike the ordinary *Melo amphora*, which can be gathered all the year round, on sandy or muddy-sandy, weed covered flats, in comparatively shallow water, 6 feet or less, the "white" *Melo* is a deep water variety that gets caught unawares by the first low tides and then retreats into deeper water. All specimens taken by me have followed this pattern, and all have been taken from the fringing reef in Gloucester Passage, on the eastern side of Cape Gloucester.

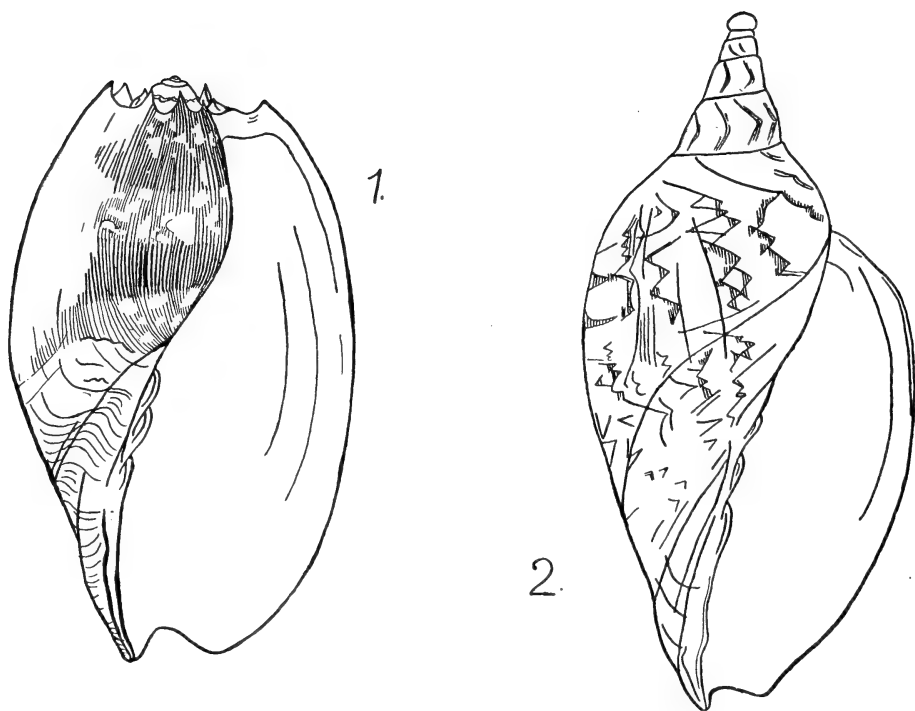
Animal:

I have not been able to find any difference in the animal from that of the usual *Melo amphora*. It is not until the removal of the animal commences that one realises that one has found a "white" one.

Incidence:

Over a period of eight years, during which I have systematically worked Cape Gloucester's beach, flats, banks and reefs, I have only found four live specimens, and never more than one in any year until this year, when I found the two now in your possession.

Plate II



Explanation of Plate II

1. *Melo amphora knighti*.
2. *Ericusa sowerbyi porcellana*.

G. Thornley del.

General:

All specimens of the "white" one came from an area of less than half a mile in length, where there is an unusually steep decline in the sea bed.

I think that it would be reasonable to deduce that it is by nature a deep water species, seldom found in shallow water or on exposed reefs."

The new *Melo* differs greatly from the usual form, being much more roundly ovate and more sharply angled anteriorly.

Both of my specimens are half crowned, the spikes becoming obsolete at an early age.

However, perhaps the most obvious and striking characteristic, is the china whiteness of the interior which extends over the whole of the inner lip. This albinism is also marked on the inner edges of the columella and the plaits, which, like those of the ordinary *amphora*, are three in number. This white glaze becomes thicker with age.

The columella near the canal, is more excavated than in the usual *Melo*, giving a recurved appearance.

The protoconch also shows a degree of albinism, and, especially in the older specimen, is depressed below the crown, the succeeding whorls completely hiding it.

The back of the shell is very like that of the ordinary shell but the patterning is in distinct bands with large patches of white or near white.

The shell of the albino is much thinner than that of the usual *amphora* with the natural result that it is much lighter in weight.

This shell can attain a length of 15½ in. and a breadth of 10½ in.

I have great pleasure in naming the new shell *Melo amphora*, sub-species *knighti*, after Mr. Knight who first found it and who has helped so many collectors, not only in securing specimens of shells for their collections, but also to widen their knowledge of ecology by sharing with them his intelligent observations.

Ericusa sowerbyi porcellana, subsp. nov.

In August of last year (1952) I obtained a number of *Ericusa sowerbyi* (Kiener) from a trawler operating in the vicinity of Gabo Island.

To my surprise, one of these proved also to be an albino.

I have had a great number of *Ericusa sowerbyi* myself and have seen very many more belonging to other people but this was the first "white" one.

The animal was not different from that of the usual type.

The shell itself was of the short rounded Tasmanian kind, rather than the elongated N.S.W. form called by Iredale *Ericusa sowerbyi perspecta*.

Again, the most striking characteristic is the interior of the shell which is of porcellanous white, as also is the columella.

The a binism extends to a considerable portion of the body whorl underneath.

Like *Livonia mamilla leucostoma* Mayblom, this shell has a striking apex. While it is not of the same dazzling whiteness as the interior, yet it is so markedly light in colour as to strike the eye immediately.

There is no lightness in weight. In fact, rather the reverse is the case, as its lip is somewhat thickened. However, this may be due to other reasons, such as a slight injury to the young shell. Or again, it may be due to the age of the shell, which is fully adult and may be approaching senility.

I think an appropriate name for this shell is *Ericusa sowerbyi*, sub-species *porcellana*.

I wish to acknowledge with gratitude the invaluable help I received from Mr. Charles F. Knight and Miss Gertrude Thornley who drew the plate for this article and helped me with her advice.

New Shells for New South Wales

BY LEE WOOLACOTT

(Plate III)

Superfamily MURICACEA

Family THAIDIDAE

Genus RHOMBOTHAIS, gen. nov.

Genotype, *Rhombothais arbutum*, sp. nov.

Shell small, body whorl large, inflated and proportionally about two-thirds of total height, and well angled at the periphery. Columella smooth with a small longitudinal umbilical pit and a narrow, coarsely-scaled flange curving to base. Sculpture of numerous small, spiral ribs bearing small, irregular and flattened scales. The interstices are moderately deep and narrower than the ribs. There are several medium-sized nodules on the periphery of each whorl. A smooth, sub-

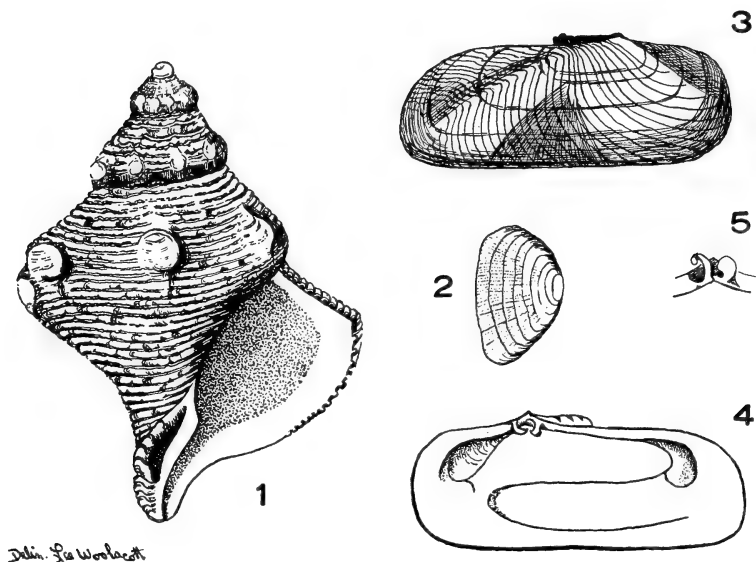
globose protoconch of one and a half whorls. Operculum horny, sub-ovate, with a lateral nucleus and of a golden-brown colour. Short, half-open, reflected canal.

The shell here described cannot be confused with Schumacher's genus, *Rapana*, which is a large, three to five inch shell, with a very low spire and a large, flared, lamellose flange at the base of the columella. It differs too widely from Swainson's *Laticaxis* (e.g. *Laticaxis marcae*, Grey) to need comparison here. Further, as the shell under consideration is not a coral dweller, but lives in and among algae on a rocky shore between tides, it is obvious that it cannot belong to the genus *Coralliophila* of H. and A. Adams which contains coral-living moluscs whose form shows adaptation to their particular environment.

Rhombothais arbutum, sp. nov. Figs. 1-2.

Shell small, 15mm. x 11mm., the body whorl being two-thirds of height. The shell consists of four whorls and a smooth, sub-globose protoconch of one and a half whorls. Sculpture of numerous close-set spiral ribs with narrow, moderately deep interstices, the ribs bearing somewhat obsolete scales which are more lamellose in some juvenile specimens. The periphery of each whorl is markedly angled and bears about seven medium-sized nodules. Columella smooth, with a small umbilical chink and a narrow, poorly laminated flange curving to base. Mouth medium, subovate. Outer lip simple, crenulated by the ribs.

Plate III



Delin. S. Woolacott

Explanation of Plate III

- 1-2. *Rhombothais arbutum*, gen. et sp. nov.
1. Adult shell x 4.
2. Operculum x 4.
- 3-5. *Solecurtus leone*, sp. nov.
3. Exterior view of right valve. Natural size.
4. Interior view of right valve. Natural size.
5. Hinge teeth of right valve, tilted x 2

L. Woolacott del.

Very short, half-open canal slightly reflected. Colour is from yellow to deep apricot-pink.

Location. Angourie, about three and a half miles south of the Clarence River Heads, N.S.W., November, 1942. Type now in the Australian Museum.

The shells were found living in crevices and on rock surfaces, under thick algae, and on lifting the fronds carefully, as one does strawberry leaves to find the fruit, these dainty, pink shells were discovered; hence the specific name, *arbutum*, the wild strawberry.

Superfamily SOLENACEA

Family GARIIDAE

Genus *Solecurtus* Blainville, 1824.

Solecurtus leone, sp. nov. Figs. 3-5.

Shell medium size, 44mm. x 18mm., inequilateral, equivalve, both ends gaping. Sculpture of about thirty oblique, diverging flattened ridges, and strong accremental striae which divide the shell into numerous uneven growth stages externally, and showing as faintly-rounded ridges internally. Each valve has a triangular medial depression externally which is strengthened internally by two radiating processes of slightly thickened shell. External ligament of very dark brown, attached to a slight shelly projection of the dorsal margin. In the right valve are two curved cardinal teeth, the posterior one being flattened (partly broken in type specimen), and in the left valve, one cardinal and one short lateral tooth. Umbones approximate, somewhat flat and sharp. Periostracum slightly wrinkled and of a dull, straw colour. The shell is white with faint yellow in the umbonal region.

Location. From off Brush Island, fifteen miles south of Ulladulla, N.S.W.; 40-45 fathoms. They have also been taken at Eden and Port Stephens. Type in the Australian Museum.

At a line drawn from the umbones to a little above the junction of the posterior and ventral margins, the oblique ridges diverge, and those which curve towards the anterior end fall short, leaving a smooth, triangular area. It shows close affinity with the fossil shell, *Solecurtus legrandi*, Ten. Woods, from Table Bay, Tasmania (probably Miocene), but differs in that it has one end smooth, *legrandi* being smooth both anteriorly and posteriorly; in being slightly larger, and having the oblique ridges continuous, and not disconnected by the accremental striae as in *legrandi*. The northern shell, *Solecurtus deshayesii* Dunker, is also a white shell of similar facies, but averages twenty-six ribs on a larger shell, and the point of divergence of the ridges is quite different, being pushed up very near the dorsal margin.

The new species is named in honour of Mrs. Leone Harford, honorary secretary of the Royal Zoological Society of New South Wales.

In conclusion, I wish to express my gratitude to Miss Elizabeth Pope, without whose untiring assistance and encouragement this article would never have been attempted, to Mr. T. Iredale who assisted in ways too varied to enumerate, to Miss G. Thornley and to Mrs. R. Kerslake.

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Aberrant Cowries of the Keppel Islands, Queensland

By J. A. KERSLAKE

The strange aberrations of many species of New Caledonian cowries have been well known since the beginning of this century when Dautzenberg recorded them in *Journ. de Conch.*, Vol. 50, 1902 and Vol. 54, 1906. They may be described briefly as elongations of the shell with beaked extremities accompanied by more or less complete melanism.

As yet no satisfying explanation of the cause has been advanced. Rossiter, working in Noumea at the time of the above publication, attributed it to an excess of calcareous matter in the animal's food, but as normal specimens were present in the same areas, Dautzenberg rejected this theory. Montrouzier, an earlier conchologist of New Caledonia, wrote, in 1875, that he thought the rostration was due to disease, as the dorsal area of most specimens in this category showed scars.

It is possible that in the future Australian workers may be able to solve this puzzle, as aberrant cowries, showing the same malformations and melanism as those of New Caledonia, are now being found on islands off the Queensland coast. Iredale, in *The Australian Zoologist*, Vol. IX, pt. 3, Dec., 1939, p. 319, mentions their occurrence in the Capricorn Group and they can now be recorded from the Keppel Islands, a few miles off the Queensland coast at Yeppoon.

Curiously, though probably without significance, these three locations, Noumea, N.C., the Capricorn Group and the Keppel Islands, are approximately on the same degree of latitude, the Tropic of Capricorn.

Descriptions of aberrant cowries from the Keppel Islands are as follows:

Arabica arabica (Linne). (Syst. Nat. xth ed., p. 718, Jan. 1.)

A specimen found at Corroboree Island differs little in form from normal ones from these islands. Length 60mm., breadth 38mm., height 38mm. Base slightly flatter than usual, but with normal colouring extending about 10mm. up the sides. Back covered by a dark brown, almost black, glaze completely obscuring the normal pattern except where it meets the edges of the pale basal glaze.

Monetaria annulus (Linne). (Syst. Nat., xth ed., p. 723, Jan. 1.)

From North Keppel Island. Length 38mm., breadth 18mm.; general shape distorted; colour of back normal except for three small splashes of orange; extremities very elongated; teeth normal.

Staphylea staphylea descripta Iredale. (Aust. Zoologist, Vol. 8, pt. 2, 1935, p. 119.)

From North Keppel Island. Length 26mm. Ends are beaked and their normal brown stain spreads more than usual to the back of the shell. Base, dark brown with somewhat twisted appearance, but teeth strong and normal. Back of shell pale beige colour; pustules not prominent.

Purperosa facifer Iredale. (Aust. Zoologist, Vol. 8, pt. 2, 1935, p. 119.)

From Pumpkin Island. Shell narrower than usual and slightly distorted on one side. Ends slightly beaked and twisted, dark brown. Teeth imperfect and dark brown.

Paulonaria macula Angas. (Proc. Zool. Soc. (Lond.) 1867, p. 206.)

From North Keppel Island. Length 24mm., breadth 11mm., height 9mm. Extremities dark brown and greatly elongated into beaks. Back pale blue but intensely speckled and blotched with brown. Base yellowish, with teeth twisted and distorted. Other specimens have been found showing less markedly the malformations and melanism.

Erronea nimiserrans Iredale. (Aust. Zoologist, Vol. 8, pt. 2, 1935, p. 130.)

This species, formerly known as "*errones*" Linne, is very variable in size in normal specimens found at North Keppel Island, and appears to range from about 19mm. to 34mm. in length.

Aberrant forms available range from 19mm. to 29mm. in length, but in other respects follow the same divergence as the shell described as follows from North Keppel Island; Length 28mm., breadth 15mm., height 12mm. Back covered with a dark brown glaze extending well down on to the posterior and anterior ends which are slightly elongated. Base, cream, extending up side of the shell about 6mm. Form of base flattened and distorted; teeth weaker than in normal shell and flattened on the outer lip.

I am indebted to Mr. and Mrs. Roy Bowman of Yeppoon for their help and generosity in sending me the species described above.

Sexual Dimorphism in *Strombus auris-dianae* Linne

BY JOHN LASERON

At a meeting of our shell club I exhibited three pairs, male and female, of the beautiful stromb, *Strombus auris-dianae* Linne, obtained on a recent visit to Bowen, Queensland. These were collected by Mr. Charles Knight of Bowen, who found them mating in March or April of 1952, a fact which it is believed has never before been published. Their habitat in this area is on the sand flats at Dingo Beach where they are found at night time fairly commonly singly crawling at dead low tide entirely out of the water. Mating couples are, however, rarely seen. An interesting feature is that, while the species as a whole is very variable in colour, the mating pairs match each other very closely. The female is much the larger of the two, measurements of one pair being, the female 3.3 inches in length, the male only 2.1 inches.

Shell Collecting—Further Afield

BY FRANK MCCAMLEY

Yes! Just about 1700 miles further afield than our local collecting grounds. Locality—Fiji. July, 1952.

Enquiries made before venturing on this "search" led me to believe that collecting around the shores of the Capital, Suva, was poor, and that the south coast of this small island was of far greater interest, from a collector's point of view.

However, practical experience has taught me that the mud flats in Suva Harbour yield many interesting species at the low tide. Conversation with a local shell-dealer leads me to believe that I was most fortunate to collect alive in this Harbour, a specimen of *Cypraea mappa*—a feat which, according to him, was impossible, as it had never been found there before.

Very plentiful too were specimens of *Spondylus ducalis*, *Pecten laticostatus*, many varieties of *Conus*—six varieties of which are quite new to me, bivalves, *Vasum*, *Thais*, *Cymatium* and in astonishing numbers, all over the island, three varieties of *Cypraea moneta*.

Further around the Harbour, in Walu Bay at the suburb of Lami, I collected alive, perfect and beautiful specimens of *Strombus auris-dianae*, *Murex ternispina*, *Murex adusta*, *Cymatium aquatile* and *Cymatium rubecula*. In addition, a large specimen of *Bursa ponderosa*, but so badly encrusted with parasites and lime corrosion that I decided to leave it undisturbed.

After the first week I proceeded to the "Collector's Paradise," and quite agree it might be so, if one were able to explore the outer and deeper side of the reef, which stretches from Korolevu to Cuvu (a distance of some 35 miles), and on which one can walk out at low tide for a distance of approximately half a mile. On this reef I found many interesting species, including new Cowries, of which there are listed 60 varieties (S.A. Museum Records, Steadman & Cotton).

Here, too, were varieties of *Conus* and *Thais*, but these were firmly embedded in coral and on release with an iron spike were found to be of no value as they were badly corroded.

The shores of Sovi Bay, along this reef, must, after a storm, be a collector's dream. Many species are found washed on to the shore, including Strombs, Cymatiums, Cypraea, Olivella, Distortio, Mitres, bivalves, Conus and others.

Interesting indeed was the animal of *Conus textilis* with its red white and blue tail, and the animal of a small dark grey *Cypraea*, which was a beautiful scarlet.

The animal of most of these shells is eaten by the Fijian native. To mention a few, *Cypraea tigris*, *Pterocera lambis*, Clams, bivalves and *Vasum*, and many a very beautiful shell I saw smashed to pieces on the shore.

Later, on a cruise of the Asawa Islands, I found, as is to be expected, that *C. tigris* (*Bulla Bulla*), abounded everywhere, but nowhere on my travels have I seen such perfect specimens of *C. mauritiana*. On these islands, too, in numbers, were *Turbo petholatus*, *Nautilus pompilius*, *Pecten pallium* and *Charonia tritonis*. Bad weather, however, prevented me from searching too long and diligently, but on Paradise Reef I noted the small flat coral flowers actually growing on a green weedlike plant.

One, of course, does not speak of Fiji without mentioning its own particular shell *Cypraea aurantia*, and though I was unable to collect these personally—their main habitat being the Lau Group—I was indeed fortunate to procure a pair of really beautiful specimens.

Homeward bound at New Caledonia, I also procured specimens of *Purpura persica* and *Terebellum terebellum*, but as my stay at Noumea was merely overnight, this was better than nothing.

Time and space will not permit me to write more of this Tropic Isle and collecting thereon, but the joy and pleasure derived by me on this vacation leads me to say, if possible, "go thou and do likewise."

Book Reviews

"Copenhagen Decisions on Zoological Nomenclature," London, December 1953. (International Trust for Zoological Nomenclature, 41 Queen's Gate, London, S.W.7. Price, Five Shillings stg.), pp. i-xxix + 1-135, 2 pls.

This is an indispensable work of interim reference for zoologists, in particular research workers and systematists and students about to embark on zoological research. It embodies the Decisions on Zoological Nomenclature taken by the Fourteenth International Congress of Zoology at Copenhagen, 1953, and covers the conclusions reached by the International Colloquium of Zoological Nomenclature as to additions to and modifications of the *Regles Internationales de la Nomenclature Zoologique*. The International Trust for Zoological Nomenclature met in Copenhagen during the week preceding the opening of the Fourteenth International Congress of Zoology (1953) to consider in detail the problems of zoological nomenclature. Invitations were issued by the International Trust to leading institutions, learned societies and other bodies to appoint their representatives to the colloquium: in addition, a number of personal invitations were issued. The reviewer had the honour of receiving a personal invitation as the Australian representative at the colloquium, the Australian representative, Dr. J. Pearson of Hobart, being unable to attend.

Only those present at the colloquium could be aware of the tremendous amount of nomenclature problems considered and the detailed work that was covered, culminating in a unanimous Report to the Congress for adoption. Zoologists as a whole are greatly indebted to the colloquium and in particular those closely connected with the ultimate, and extraordinarily speedy, publication within a few months of the colloquium of the Decisions on Zoological Nomenclature. It is in effect the only source from which specialists will be able to obtain particulars of decisions taken at Copenhagen. It is nevertheless intended that the above mentioned revised *Regles* will be published as rapidly as possible. Through the present publication and the proposed revised *Regles*, the taxonomic headaches that have so disturbed international zoologists will be dispelled.

In view of her presence at the colloquium and her understanding of the long and exacting hours spent by the Chairman, Mr. Francis Hemming, C.M.G., C.B.E., and his very willing band of helpers, in discussions, preparation, and collation of documents, etc., the reviewer would be remiss if she did not take this opportunity to extend her congratulations to them on the splendid results of the colloquium as indicated in this Report.

JOYCE ALLAN.

"Shells of the Malaysian Seas." De Spieghele Publishing Co., Amsterdam, Holland.

This volume is an "art" publication and consists of 64 plates, each approx. $8\frac{1}{2}$ x $6\frac{1}{2}$, photographed by Mr. Paul Bessem with 16 pages of text by Mrs. W. S. S. van Benthem Jutting.

Although a full page is usually allotted to each shell illustration the subject matter seldom exceeds 5 lines. The shells have been photographed from their most artistic angle, but unfortunately this quite often shows an unfamiliar shape or ignores the peculiarity which makes the specimen distinct to the zoologist.

While to the amateur shell enthusiasts it is a beautiful addition to the library and for the photographer it is a splendid collection of shell studies, for scientific study the information is too vague—coloration, range of size, ecology and area of distribution are inadequately dealt with.

L. HARFORD.

LIST OF MEMBERS OF THE ROYAL ZOOLOGICAL SOCIETY OF N.S.W. AS AT 1st JULY, 1953

PATRON:

His Excellency the Governor, Lieutenant-General Sir John Northcott,
K.C.M.G., K.C.V.O., C.B.

VICE-PATRONS:

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Langham House, Ham Common, Surrey, England.
The Right Honorable Sir John Greig Latham, G.C.M.G., 83 Rau St.,
Armada, Victoria.

ENDOWMENT MEMBER:

Hallstrom, Sir E. J. L., F.R.Z.S., 462 Willoughby Rd., Willoughby.

ASSOCIATE BENEFACTORS:

Littlejohn, Albert, c/o Australian Club, 165 Macquarie St., Sydney.
Weingott, Mr. L., 76 Clarence Street, Sydney.
Walter & Eliza Hall Trust, Box 130CC, G.P.O., Sydney.

FELLOWS:

Allan, Miss Joyce K., Australian Museum, Sydney.
Barrett, Charles, C.M.Z.S., "Maralena," Maysbury St., Elsternwick, Vic.
Chisholm, A. H., c/o Angus & Robertson, Castlereagh St., Sydney.
Cotton, Bernard Charles, South Australian Museum, North Terrace,
Adelaide, S.A.
Glauert, L., Western Australian Museum, Perth, W.A.
Halloran, Dr. Garnet, 143 Macquarie St., Sydney.
Hallstrom, Sir E. J. L., 462 Willoughby Rd., Willoughby.
Hindwood, Keith A., Wingello House, Angel Place, Sydney.
Iredale, Tom, "Solander," Queenscliff Rd., Manly.
Kingham, J. R., Australian Museum, Sydney.
Laseron, C. F., 15 Hill St., Balgowlah.
Musgrave, Anthony, Australian Museum, Sydney.
Pope, Miss Elizabeth, 36 Kameruka Rd., Northbridge.
Rayment, Tarlton, Bath St., Sandringham, Vic.
Roughley, Theodore Cleveland, Coolong Rd., Vaucluse.
Troughton, Ellis Le Geyt, Australian Museum, Sydney.
Ward, Melbourne, Gallery of Natural History and Native Art, Medlow
Bath, N.S.W.
Whitley, G. P., The Australian Museum, Sydney.
Zeck, E. H., Entomological Branch, Dept. of Agriculture, Box 36, G.P.O.,
Sydney.

HONORARY MEMBERS:

Allan, Miss Joyce K., F.R.Z.S., Australian Museum, Sydney.
Dunbabin, Thomas, c/o Aust. High Commissioner, Ottawa, Canada.
Evatt, The Hon. Clive, 121 Macquarie St., Sydney.
Fairfax, Vincent, 850 New South Head Rd., Double Bay.
Iredale, Tom, F.R.Z.S., "Solander," Queenscliff Rd., Manly.
Shipway, Phillip, 133 Pitt St., Sydney.
Stiffe, R. J., 350 George St., Sydney.

LIFE MEMBERS:

Allman, Stuart L. W., B.Sc.Ag., M.Sc., 42 Premier St., Neutral Bay
Baxter, Mrs. D., 35 Station St., Crows Nest.
Bright, James L., 49 Victoria St., Waverley.
Bryce, Ernest J., 47 Nelson Rd., Killara.

Buckle, Frank, 104 Hunter St., Sydney.
 Campbell, Joseph Owen, Clump Pt., via El/Arish, Nth. Queensland.
 Comtesse, Capt. D. L., No. 3 Flat, Bardsley Garden, North Sydney.
 Crommelin, Miss Minard F., Warra Sanctuary, Pearl Beach, via Woy Woy.
 Dellow, Walter Joseph, 32 Alibone St., Ashfield.
 Dew, Miss Barbara, 16 Wallaroy Rd., Double Bay.
 Dixson, Robert Craig, 33 Hunter St., Sydney.
 Duff, Miss Elizabeth Eleanor, 460 Burwood Rd., Belmore.
 Friend, Alfred Harry, B.Sc.(Agr.), c/o Entomology Branch, Dept. of Agriculture, P.O. Box 36, Sydney.
 Goddard, William Strickland, 4 Lennox St., Mosman.
 Golding, Miss M., 2 Broderick St., Balmain.
 Halloran, Aubrey. O.B.E., B.A., LL.B., 28 Martin Place, Sydney.
 Hallstrom, John E., 462 Willoughby Rd., Willoughby.
 Harford, Mrs. Leone Z., 33 Henson St., Marrickville.
 Hendy, H. R., Mbabane, Swaziland, South Africa.
 Hewitt, Frank Charles, 4 St. Elmo St., Clifton Gardens.
 Hordern, Sir Samuel, "Babworth House," Darling Point.
 Johnston, Cyril D., Terrigal, Bennet St., Glenbrook.
 Johnston, Peter Robert, 15 Fairfax Rd., Mosman.
 Keast, James Allen, 313 West Botany St., Rockdale.
 McCamley, F., Flat No. 6, 25 Clarendon Rd., Stanmore.
 Mackillop, John C., "Cumbrae," Elamatta Ave., Mosman.
 Manwaring, H. A., 2 Altona St., Abbotsford.
 Minell, Mrs. Dorothy Ebsworth, 85 Birtley Towers, Elizabeth Bay.
 Monticone, Dr. Charles Albert, G.P.O. Box 2058, Sydney.
 Morgan, H. E., 74 Pitt St., Sydney.
 Murray, C. Stuart, G.P.O. Box 2427, Sydney.
 Musgrave, Anthony, F.R.Z.S., Australian Museum, Sydney.
 Oldham, Roland V., c/o Mrs. T. Suess, 70 Kent Rd., Woolloowin, Q'land.
 Ormsby, Anthony Irwin, 3 Castlereagh St., Sydney.
 Packer, H. E., Belgenny Flats, Taylor Square, Darlinghurst.
 Pope, Miss Elizabeth, F.R.Z.S., 36 Kameruka Rd., Northbridge.
 Rogers, William James, 12 Bradleys Head Rd., Mosman.
 Scott, N. A. H., 22 Terminus St., Petersham.
 Slater, K. R., c/o Australian Petroleum Co., Port Moresby, Papua.
 Smith, Warren Frederick, 14 Myrna Rd., Strathfield.
 Spain, Col. Alfred, V.D., 16 Spring St., Sydney.
 Spring, Robert Alexander, "Woodford," St. Elmo St., Mosman.
 Street, the Hon. Mr. Justice K. W., 2 Greenoaks Ave., Edgecliff.
 Todman, R. G., "Merdin," 328 Edgecliff Rd., Edgecliff.
 Troughton, Ellis Le Geyt, F.R.Z.S., Australian Museum, Sydney.
 Turner, W. H., 15 Sutherland Rd, Chatswood.
 Vickery, Ottomar George, 63 Pitt St., Sydney.
 Ward, Melbourne, F.R.Z.S., Gallery of Natural History and Native Art, Medlow Bath, N.S.W.
 Warland, Leslie Keith, 8 Westbourne St., Carlton.
 Warland, Oswald Edward, 8 Westbourne St., Carlton.
 White, Alfred Henry, Bell Trees, Scone.
 White, Mrs. Millicent, c/o Hotel Australia, Sydney.
 Whitley, Gilbert Percy, F.R.Z.S., c/o Australian Museum, Sydney.
 Wiley, Dr. C. J., 193 Macquarie St., Sydney.
 Woolcott, Mrs. L. H., 11a Everview Ave., Mosman.
 Worrell, E. F. A., Ocean Beach Aquarium, Umina, Woy Woy.
 Yardley, H., 10 Great North Rd., Five Dock.
 Zeck, Emil H., F.R.Z.S., Entomological Branch, Dept. of Agriculture, G.P.O. Box 36, Sydney.

ORDINARY MEMBERS:

Adams, Miss Muriel M., 46 Milson Rd., Cremorne.
 Adkins, John S., 10 Middle Head Rd., Mosman.
 Angell, Mr. A., 14 O'Donnell St., North Bondi.

Allan, Miss Elizabeth May, "Vergemount," Gilliver Ave., Vaucluse.
 Allen, Mr. H. A., 12 Audrey St., Balgowlah.
 Allen, Mrs. H. A., 12 Audrey St., Balgowlah.
 Allsop, Mr. Hartley Ernest, 38 Burrawong Ave., Clifton Gardens.
 Andrews, William C., 38 Kameruka Rd., Northbridge.
 Anstey, A. Mervyn, 6 Bradley's Head Rd., Mosman.
 Armstrong, J. E., 70 Wolseley Rd., Mosman.
 Arnott, Ronald Bruce, 3 Nottingham Flats, 39 Fitzroy St., Kirribilli.
 Arthur, Mrs. Jessie Sinclair, 796 Military Rd., Mosman.
 Asher, David A., 65 Falcon St., Crows Nest.
 Atkinson, Major Gerald B., 8 Superba Pde., Mosman.
 Austin, Miss M., 352 Victoria Ave., Chatswood.
 Baass, Otto Hermann, 31 Bradleys Hd. Rd., Mosman.
 Barclay, T. D., 511 Kent St., Sydney.
 Barrett, Frederick William, 17 Bridge St., Sydney.
 Barrie, W., 15 Blair St., Bondi.
 Baur, George N., 24 Bushlands Ave., Gordon.
 Beahan, William John, 28 Martin Place, Sydney.
 Beardsall, Mrs. Lois, 141 Miller St., North Sydney.
 Berckelman, Miss Edith M., 29 Bradley's Head Rd., Mosman.
 Berne, Norman, 3 Duntroon Ave., Wollstonecraft.
 Berry, Edgar George, 15 Ruby St., Mosman.
 Beswick, G. H., 107 Elizabeth St., Sydney.
 Biber, Samuel, 675 New South Head Rd., Rose Bay.
 Blackburn, Maurice, D.Sc., 118 Willawong Rd., Caringbah.
 Blenkarn, G. G., c/o C.T.A. Club, Martin Place, Sydney.
 Bond, Mrs. J., 85 Blakesley Rd., South Hurstville.
 Bouchier, Reginald W., 191 Nicholson Pde., Cronulla.
 Bradley, Miss E. B., 46 Iluka Rd., Mosman.
 Bray, Miss Q., 10 St. Elmo St., Mosman.
 Brookes, Brian H., 15 Bradleys Head Rd., Mosman.
 Brooks, Wm. & Co. Ltd., 199 Elizabeth St., Waterloo.
 Brown, Sir Harry Percy, 16 Luxor Parade, Roseville.
 Bruce, Robert, 126 Falcon St., Crows Nest.
 Brunton, John R., Flat 9, 200 Forbes St., Darlinghurst.
 Bryden-Brown, C., 5 Burrawong Ave., Clifton Gardens.
 Buchanan, Captain H. J., R.A.N., Navy Office, Melbourne.
 Bullen, Errol, 7 Burrabirra Ave., Vaucluse.
 Burgh, Col. Henry Bertram, 42 Warialda St., West Kogarah.
 Bush, Francis G., 492 King St., Newtown.
 Bush, Kent Willard, 704 Forest Rd., Mortdale.
 Campbell, Miss J., 39 Derwent St., Glebe Point.
 Campbell, T. G., c/o C.S.I.R.O., Box 109, Canberra, A.C.T.
 Campe, Mrs. I., 64 Tindale Rd., Artarmon.
 Catt, John Ward, "Tomah" Church St., Carlingford.
 Chaffer, Norman, 1 Roslyn Ave., Roseville.
 Chapman, Miss Julia Ann, c/o Francis Chapman Sons & Deekes Ltd.,
 2b Castlereagh St., Sydney.
 Clark, Eric Edward, 148 Franklyn St., Matraville.
 Clark, Dr. Ernest D., 822 Military Rd., Mosman.
 Clark, Roland C., 33 Kardinia Rd., Mosman.
 Clark, R., Bathurst Rd., Springwood.
 Clayton, Charles, c/o Printers Pty. Ltd., P.O. Box 36, Waterloo.
 Clyne, The Hon. Daniel, 29 Farleigh St., Ashfield.
 Collett, Sister M., Donald St., Greenwich.
 Copland, Stephen J., Chilton Pde., Warrawee.
 Coppleson, Dr. V. M., 225 Macquarie St., Sydney.
 Crane, Stanley Warren, 13 David St., Clifton Gardens.
 Crowley, V., Palmgrove Rd., Avalon Beach.
 d'Alpuget, Miss B., Apartment 8, 40 Blue's Point Rd., McMahon's Point.
 Darrell, Herbert, "Bushlands," Acres Rd., Kellyville.
 Darrell, Mrs. M. K., "Bushlands," Acres Rd., Kellyville.

Davidson, Charles Robert, Fays Ltd., Liverpool St., Sydney.
 Dawson, Richard Stanley, 36a Burrawong Ave., Mosman.
 Deakin, Dr. John Edward Ferdinand, "Vindoro," Military Rd., Mosman.
 Deck, Dr. Ernest Field, 9 Kardinia Rd., Clifton Gardens.
 Dempster, G. W., 10 Kardinia Rd., Mosman.
 Denham, H. H., 463 Willoughby Rd., Willoughby.
 Desmarchelier, Theo, 3 Flat, 11 Bradleys Head Rd., Mosman.
 Dewhurst, Norman, 2 St. Elmo St., Mosman.
 Dobson, Roderick, 44 Junction Rd., Wahroonga.
 Done, Herbert Stanley, Rockley St., Castlecrag.
 Doswell, R., 12 Burrawong Ave., Clifton Gardens.
 Dougall, Andrew, 43 Lancaster Rd., Rose Bay.
 Douglass, Colin W. H., 48 Bradleys Head Rd., Mosman.
 Douglass, E. W. T., Commercial Banking Co. of Sydney, George St., Sydney.
 Downing, The Hon. R. R., 28 Earle St., Gladesville.
 Drake, J. M., 40 Burrawong Ave., Clifton Garedns.
 Duff, J. G. Snr., 7 Cross St., Mosman.
 Duff, J. G. Jnr., 7 Cross St., Mosman.
 Dummett, Stephen, 7 English St., Kogarah.
 Duncan, Grantley A., Cooyong and Pittwater Rds., Terrey Hills, via Chatswood.
 Dwyer, Edmond Alfred, 2 St. Elmo St., Clifton Gardens.
 Dwyer, John Edward, 6 Simpson St., Mosman.
 Eaton, Francis William, 26 Bellevue St., Fairlight, Manly.
 Edmanson, R. G., 3 Princes Promenade, Seaforth.
 Edwards, Edward Oliver, Cummins Rd., Menangle Park.
 Elliott, John Henry, 8 Shellcove Rd., Neutral Bay.
 Ellison, N., 13 Whiting Beach Rd., Mosman.
 Ensor, E. G., 1 Gundimaine Ave., Neutral Bay.
 Evans, Arthur Phillipi, 24 Fifth Ave., Eastwood.
 Evans, Raymond, "Garth Craig," 6 Flood St., Clovelly.
 Everitt, Theo Athol, Rural Bank, Box 41, G.P.O., Sydney.
 Fairfax, John & Sons, Hunter St., Sydney.
 Farleigh, Miss K. M., 32 Kardinia Rd., Mosman.
 Fell, John W., 15 Silex Rd., Clifton Gardens.
 Ferguson, George A., 89 Castlereagh St., Sydney.
 Finckh, Dr. E. S., No. 1 Valley Rd., Lindfield.
 Finckh, E. V., 1 Valley Rd., Lindfield.
 Fisk, William James, 18 Moore St., Campsie.
 Fitzhardinge, Miss Julia G., 19 Beecroft Rd., Pennant Hills.
 Fleming, A., 30 Prince Albert St., Mosman.
 Fletcher, E., 22 Morden St., Cammeray.
 Ford, Robert Paul, Athol Flats, Whiting Beach Rd., Mosman.
 Francis, James John, 3 Castlereagh St., Sydney.
 Friend, Norman Bartlett, c/o L. W. Chant, 12 Spring St., Sydney.
 Gadsden, E. J., 7 Greenknowe Ave., Potts Point.
 Galvin, P. F., 15 Thompson St., Mosman.
 Garrard, Thomas A., c/o Australian New Zealand Bank, Ltd., Banks-town.
 Gates, Edward Roy, 98 High St., Willoughby.
 Gatliff, Henry Ernest, 82 Raglan St., Mosman.
 Gibson, John Alan, 19 Ruby St., Mosman.
 Glauert, L., F.R.Z.S., Western Australian Museum, Perth.
 Gollin, Mrs. B., Flat 65, 4 Macleay St., Potts Point.
 Goodman, C. W., c/o Quarrymans Hotel, Harris St., Sydney.
 Green, R. Rae, 5 Whiting Beach Rd., Mosman.
 Gregory, Mrs. Hilda, 2 Musgrave St., Mosman.
 Hackman, Trevor Ratcliff, 2 Milton Ave., Mosman.
 Hall, Nancy Myra, "Lynwood," 1 Major St., Mosman.
 Halloran, Dr. Garnet, F.R.Z.S., 143 Macquarie St., Sydney.
 Harper, A. G., 26 Simpsons Bay, Bundeena.

Harris, Dr. Clive, 235 Macquarie St., Sydney.
 Hart, Lavington B., 4 Athol Flats, Rickard Ave., Mosman.
 Harvey, H., 14 Chestnut Rd., Auburn.
 Harvey, Percy Fincham, 7 Pacific St., Clovelly.
 Harvey, Mrs. P. F., 7 Pacific St., Clovelly.
 Hastings, W. K., 60 Quenton Rd., Manly.
 Hayes, D. J., 1 Watkin St., Rockdale.
 Heath, Albert Edward, Strathkyle, 19 Bligh St., Sydney.
 Heath, Gladstone Hodsoil, 3 Thompson St., Clifton Gardens.
 Herrmann, Reginald Aloysius, 15 Cambridge St., Enmore.
 Hewitt, Dr. George Henry, Park St., Bellingen.
 Heyde, Charles William, 216 Nicholson Pde., Cronulla.
 Higgs, A. B., 4 Melton Ave., Mosman.
 Hill, A. C. W., 115 Pitt St., Sydney.
 Hill, Miss Jean B., 115 Pitt St., Sydney.
 Hill, Mr. F. T., 21 Coolaven Rd., Northbridge.
 Hindwood, Keith Alfred, F.R.Z.S., Wingello House, Angel Pl., Sydney.
 Hirst, Brian, Pine Ridge, Castle Hill.
 Hirst, Edward, Magnet House, 104 Clarence St., Sydney.
 Hittmann, Dr. B., 2-8 Longueville Rd., Lane Cove.
 Hockings, Arthur Thornton, G.P.O. Box 1761, Sydney.
 Holland, E. F., 76a Ninth Ave., Campsie.
 Hooke, R. W., 34 Thompson St., Mosman.
 Hooke, R. Waldron, 34 Thompson St., Mosman.
 Hopkinson, A. R., 1 David St., Mosman.
 Hordern, Anthony, 21 Thornton St., Darling Point.
 Hudson, William Arthur, 40 Bradleys Head Rd., Mosman.
 Hughes, John, 58 Rosebery Rd., Killara.
 Hunt, Reginald Thomas, 14 Burrawong Ave., Clifton Gardens.
 Hunt, W. L., 27 Hunter St., Sydney.
 Huntington, G., 69 Bay St. Mosman.
 Inglis, Eric, 95 Albion St., Sydney.
 Ivey, Miss Lily, 15 Gladswood Gardens, Double Bay.
 Jenkinson, Mrs. M., 326 Victoria Rd., Marrickville.
 Jentsch, Mr. A. M., 37 Smith St., Manly.
 Jervis, Mr. T. H., 74 Roseville Ave., Roseville.
 Johnson, Mr. A. C., 693 Anzac Pde., Maroubra.
 Johnson, Geoffrey Alan, 546 George St., Sydney.
 Johnson, Mrs. M. B., 27 Cherry St., Turramurra.
 Johnstone, G., 12 Larool Ave., Lindfield.
 Jones, Sir Chas. Lloyd, c/o David Jones Ltd., Sydney.
 Jones, J. C., P.O. Box 9, Biggerden, Q'land.
 Jones, Miss Valmai, 14 Middle Head Rd., Mosman.
 Judd, Everard, 24 Bradley's Head Rd., Mosman.
 Kater, Dr. Norman M., 146 Wolseley Rd., Point Piper.
 Kay, Mrs. F., 358 Victoria Rd., Marrickville.
 Kaveney, Morton, 5 Coral St., Balgowlah.
 Keighley, Frank M., Golden Valley, Sutton Forest.
 Kellner, Stephen, 174 Phillip St., Sydney.
 Kelly, Barry, 80 Mintaro Ave., Strathfield.
 Kennedy, A., 20 Marjorie Crescent, Maroubra.
 Kennedy, Miss Grace, 80 Warrane Rd., East Willoughby.
 Kerslake, Miss Joy, 29 Nundah St., Lane Cove.
 King, Ambrose, 116 Croydon Rd., Croydon.
 Kinghorn, James Roy, F.R.Z.S., Australian Museum, Sydney.
 Krug, G., 22 Bradley's Head Rd., Mosman.
 Langmuir, Ronald John, 26 Strickland St., Rose Bay.
 Laseron, C. F., 15 Hill St., Balgowlah.
 Laseron, John, 15 Hill St., Balgowlah.
 Lavett, J., Commonwealth Life (Amalgamated) Assurances Ltd., 279 George St., Sydney.
 Lawson, Albert Augustus, Harden Rd., Artarmon.

Lawson, Miss E., 30 Thompson St., Mosman.
 Leeds, Richard Alan, Warana, Wyandra, W. Line, Q'land.
 Levitt, Miss D. C., 94 Rossmore Ave., Punchbowl.
 Levitt, Miss V. C., 94 Rossmore Ave., Punchbowl.
 Lewis, George Owen, c/o Tooth & Co., Kent Brewery, Sydney.
 Lions, Mrs. F., 160 Alt St., Haberfield.
 Lippmann, Herbert Maximilian, 14 Buena Vista Ave., Mosman.
 Llewelyn, Arthur Stuart, 131 Pitt St., Sydney.
 Lloyd, Miss Edith Florence, c/o Sister May, 2 Bradleys Head Rd., Mosman.
 Lough, E. R., 12 Burrawong Ave., Mosman.
 Loveday, G. C., 28 Kardinia Rd., Clifton Gardens.
 Maher, S., 48 Sir Joseph Banks Rd., Bankstown.
 Marks, L. W., 34 Bradiey's Head Rd., Mosman.
 Marr, Sir Charles, Telegraph Rd., Pymble.
 Mathews, R., 730 Princes Highway, Sylvania.
 Matthews, Bert, "Petgar," West Street, Brookvale.
 Mayer, Matron E., 25 Homebush Rd., Strathfield.
 Meale, Kenneth Harold, 27 Norma Ave., Eastwood.
 Mellor, Walter L., 437 Forest Rd., Penshurst.
 Micholson, Julius Charles, 9 Whiting Beach Rd., Mosman.
 Miller, Don, Old Northern Rd., Glenorie.
 Milne, Allan Eden Furley, 641 Pacific Highway, Mount Colah.
 Milne, Mrs. J., 21 Joubert St., Hunters Hill.
 Monaghan, R., 3 Rockwell Cresc., Potts Point.
 Moodie, Walter S., 68 Avenue Rd., Mosman.
 Moore, Harold Hamilton, 6 Mudies Rd., St. Ives.
 Moore, William Robert, 12 Kywong Ave., Pymble.
 Morgan, Frederick E., 324 Pitt St., Sydney.
 Morley, William Arnold, 16 Elfrieda St., Mosman.
 Moss, Miss I. R., 16 Kardinia Rd., Clifton Gardens.
 Murnin, R. B., 12 Macleay St., Potts Point.
 Murray, Prof. P. D. F., Challis Professor of Zoology, Dept. of Zoology, University of Sydney.
 Murray, R. J., 34 Thornley St., Marrickville.
 McAlpine, D. K., 12 St. Thomas St., Bronte.
 McColl, S., G.P.O. Box 5003, Sydney.
 MacCulloch, Dr. H. T. C., 76 Boulevard, Lewisham.
 Macdonald, A., 11 Bradleys Head Rd., Mosman.
 McDonald, Mr. A., 33 Massey St., Gladesville.
 McDonald, Robert William, 20 Saville St., Gore Hill.
 McGill, Arnold Robert, 119 Wollongong Rd., Arncliffe.
 MacIntosh, Dr. Neil W. G., 35 Benelong Cresc., Bellevue Hill.
 Mackillop, F. C., "Cumbrae," Ellamatta Ave., Mosman.
 Mackillop, J. A., F.R.G.S., No. 6 Clytha House, Thrupp St., Neutral Bay.
 McMaster, Sir Frederick Duncan, "Dalkeith," Cassilis, N.S.W.
 McNeill, Frank A., Australian Museum, College St., Sydney.
 McRae, Colin, 1 Bradleys Head Rd., Mosman.
 McRae, David Beattie, 1 Bradleys Head Rd., Mosman.
 Nash, Robert L., 2 Lennox St., Mosman.
 Neill, Miss Frances F., 13 Bradleys Head Rd., Mosman.
 Nettheim, R. F., 21 Thompson St., Mosman.
 Nevill, J. J., 26 Prince Albert St., Mosman.
 Noble, Rupert F. S., 5 Prince Albert St., Mosman.
 Oatley, Percy Allan, 4 Prince Albert St., Mosman.
 Oberg, Olaf D. A., C.M.G., Gardeners Rd., Mascot.
 Orsben, Henry Joseph, 43 Bradleys Head Rd., Mosman.
 Palmer, Lynton Edward, 96 Pitt St., Sydney.
 Parle, P. O., 11, Lennox St., Mosman.
 Paterson, J. G., 21 Kardina Rd., Mosman.
 Paton, F. A., 46 Birriga Rd., Bellevue Hill.
 Patten, Miss Mary Kathleen, 27 Rickard Ave., Mosman.

Patten, Robert A., P.O. Box 1, Mosman.
 Patterson, William, 14 David St., Clifton Gardens.
 Pearson, Richard Browning, "Nelgowrie," Coonamble.
 Percy, Dr. C. E., Flat 2, 4 Thompson St., Mosman.
 Perry, Leonard John, 9 Thompson St., Mosman.
 Pescott, Miss Beverley May, 32 Kardinia Rd., Mosman.
 Pescott, Miss Joscelyn Farleigh, 32 Kardinia Rd., Mosman.
 Pescott, J. M., 32 Kardinia Rd., Mosman.
 Peters, Robert E., 2 Simpson St., Mosman.
 Phillips, Edward Arthur, 68 Prince Albert St., Mosman.
 Playoust, Maurice, 22 Prince Albert St., Mosman.
 Pockley, Dr. Eric, Avalon Pde., Avalon Beach, N.S.W.
 Pointon, Mrs. A., "Yantara," St. Elmo St., Mosman.
 Pollock, Ernest Frederick, 7 Carrington Ave., Strathfield.
 Ponsford, Mrs. Dorothy, "Dandenong," Bayview Rd., Bayview.
 Poolman, Noel K., 6 St. Elmo St., Clifton Gardens.
 Powell, F. D., 9 David St., Clifton Gardens.
 Prior, Mr. H. K., 44 Bradleys Head Rd., Mosman.
 Purser, Dr. Cecil, "Ascot," Grosvenor Rd., Wahroonga.
 Ramsay, J. S. P., "Kalia," Gale St., Woolwich.
 Raper, Leonard Francis, P.O. Box 284, Lismore.
 Raves, J. V., 18 Burrawong Ave., Mosman.
 Raves, Victor Sydney, Craig Athol, 18 Burrawong Ave., Clifton Gardens.
 Rayment, Mrs. R. E., 17 Muston St., Mosman.
 Read, B., 17 Pine St., North Sydney.
 Richardson, Harold R., 181 Clarence St., Sydney.
 Rigby, Alfred Leslie, 17 Castlereagh St., Sydney.
 Robbins, D., 50 Dennis St., Lakemba.
 Roberts, Kenneth Stewart, 3 Richmond Ave., Cremorne.
 Roberts, Noel L., 43 Hannah St., Beecroft.
 Robertson, Stanley Gladstone, 42 Prince Albert St., Mosman.
 Rodd, Norman W., 204 Beecroft Rd., Cheltenham.
 Roughley, Theodore Cleveland, F.R.Z.S., Coolong Rd., Vaucluse.
 Rule, Jack, 19 Thompson St., Mosman.
 Russell, George Ernest Archer, 54b Darling Pt. Rd., Edgecliff.
 Sachisthal, N. A., Charlton Boys' Home, Avona Ave., Glebe Point.
 Sampson, Mrs. R., 102 Birrell St., Waverley.
 Sargeant, L. J., 35 Gladstone St., Parramatta.
 Sargeant, L. T., 42 Brickfield St., Parramatta.
 Saunderson, M., Terranora Bldgs., 29 Reiby Pl., Sydney.
 Sayers, E. C., 455 Marrickville Rd., Dulwich Hill.
 Scott, Alban Edward, 72 Middle Head Rd., Mosman.
 Scott, George, 19 Kardinia Rd., Clifton Gardens.
 Scott, R. I., 19 Kardinia Rd., Clifton Gardens.
 Scammell, George, 7 David St., Clifton Gardens.
 Scammell, R. B., 10 Buena Vista Ave., Clifton Gardens.
 Selby, Mrs. Barbara, 7 Fisher Ave., Vaucluse.
 Shaffran, John, 9 St. Elmo St., Mosman.
 Shaw, C. Vernon, 61 Concord Rd., Concord.
 Shaw, Douglas John, 28 Prince Albert St., Mosman.
 Shelshear, Professor Joseph L., 14 Raymond Rd., Neutral Bay.
 Shirley, William Lancelot, 41 Clifford Ave., Manly.
 Simpson, W. H., 2 Effingham St., Mosman.
 Slater, Ederic Sutherland, 16 Prince Albert St., Mosman.
 Smith, Colin Campbell, 46 St. Thomas St., Waverley.
 Soady, Miss Mary E., c/o Union Trustees, 2 O'Connell St., Sydney.
 Spain, Ian Alfred H., 12 Wolseley Rd., Mosman.
 Spencer, Jack L., 62 Western Rd., Parramatta.
 Stedman, Frank Milton, 19 David St., Clifton Gardens.
 Stephen, Alfred Ernest, G.P.O. Box 1158, Sydney.
 Stephens, Henry John, 41 Lords Ave., Asquith.

Stewart, Prof. James Douglas, Gladswood House, Gladswood Gardens,
 Double Bay.
 Stinson, E. R. D., 48 Raglan St., Mosman.
 Stott, Sydney Gowan, c/o Stott & Underwood Ltd., Malcolm Lane, Syd.
 Strempel, E. A., c/o Adelaide S.S. Co. Ltd., G.P.O. Box 1535, Sydney.
 Swords, Miss Freda, 12 Carr St., Waverton.
 Tait, George Edward, 35 Moruben Rd., Mosman.
 Tansley, H. E., 50 Bradleys Head Rd., Mosman.
 Taylor, Dr. Arthur Thornton, 175 Macquarie St., Sydney.
 Thomas, Mrs. Dorothy, R.M.B., 128 Nelson Rd., Nelson, via Riverstone.
 Thomas, John, Addison St., Shell Harbour.
 Thomas, Mrs. Madge Isobel, "Antheor," Rickard Ave., Mosman.
 Thompson, Charles Kenneth, 20 Denison St., Mayfield, 2N, N.S.W.
 Thornley, E. W., 23 Mitchell Rd., Brookvale.
 Thornley, Miss Gertrude, 37 Auburn Rd., Lidcombe.
 Thornthwaite, Ormond Robert, 17 Raglan St., Mosman.
 Tillman, R. F., 44 Alfred St., Ramsgate.
 Towns, Mrs. L., 47 Sackville St., Fairfield.
 Trebilco, A. E. L., 1 Raymond Ave., Turramurra.
 Trebitsch, F., 13 Elfrieda St., Mosman.
 Trebitsch, Mrs. M., 13 Elfrieda St., Mosman.
 Tremlett, Frank C. G., 22 Thompson St., Mosman.
 Trenerry, William Leo, 567 Military Rd., Mosman.
 Utz, Gordon Albert, 6 Silex Rd., Mosman.
 Vicars, Robert John, Victoria Rd., Marrickville.
 Voorwinde, Jacob, 115 High St., Kirribilli.
 Waldron, E. W., 28 Martin Place, Sydney.
 Walker, T., 4 Parnell St., Strathfield.
 Walters, A. C., 24 Havilah St., Chatswood.
 Walters, A. Lloyd, 10 Eastview Ave., North Ryde.
 Ward, Miss Betty, 29 Bradleys Head Rd., Mosman.
 Wark, Mrs. B. M., Flat 2, 49 Bradley's Head Rd., Mosman.
 Warren, E. E., Morella Rd., Clifton Gardens.
 Waterhouse, John, 4 Lightcliff Ave., Lindfield.
 Webber, L., 4 Grandview Pde., Epping.
 Webster, Donald J., 2 Buena Vista Ave., Mosman.
 Webster, Miss M., 2 Buena Vista Ave., Mosman.
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 Wheelright, A. H., "Rosedale," Narrawa, Private Bag, Crookwell.
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 Turnidge, Frederick, 17 Tycannah St., Northbridge.
 Thomas, I. M., Dept. of Zoology, University, Adelaide.
 Waite Agricultural Institute, University of Adelaide, Adelaide.
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Wilson, James Otto, 42 Wilson Terrace, Da Costa Pk., Glenelg, S.A.
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