Abstracts of Proceedings

23RD MARCH, 1943

Annual Meeting

The Annual Meeting was held in the Society's Room, Tasmanian Museum. The President, His Excellency the Governor, presided.

The following were elected Office-bearers and members of the Council for 1943:—Dr. W. L. Crowther was elected Vice-President in the place of Mr. H. Allport, who retired under Rule 12; Mr. H. Allport and Dr. V. V. Hickman were elected in the places of Dr. W. L. Crowther and Mr. E. E. Unwin, who retired under Rule 21; Treasurer, Mr. S. Angel.

Mr. H. J. Exley was appointed Hon. Auditor.

The following were elected members of the Society:—Miss E. M. Harvey, Miss G. E. Morris, Mr. L. H. Livingston, Dr. D. E. Thomas.

The following alteration to Rule 9 was approved by the meeting on the motion of His Excellency the Governor, seconded by Dr. Evans:—

Rule 9.—The words 'and shall be sent to the Secretary not later than the 31st January of the year of election, unless the Council fixes an earlier date in any particular year' to be deleted and in their place the following to be substituted 'and shall be sent to the Secretary not less than fourteen days before the date of the Annual General Meeting'.

At the end of Rule 9, the following to be added:—'In the absence of any nominations, members present at the Annual General Meeting shall have the right to elect Office-bearers and to fill vacancies in the Council for the ensuing year as provided by the Rules of the Society'.

The Secretary made a few comments on an exhibit of mineral labelled 'Beauxite from Port Davey', which belonged to the Petterd Mineral Collection. It was pointed out that in Petterd's Catalogue of the Minerals of Tasmania he stated that this specimen agreed fairly well with the general characteristics of bauxite, although no complete analysis had been made. The Government Geologist, Dr. Thomas, has now reported that this specimen is a bleached and sheared micaceous shale, and in no way resembles bauxite. The bedding and cleavage planes which intersect at a small angle are clearly visible to the naked eye. Dr. Thomas gave the following comparison between the composition of bauxites and shales:—

	Bauxites			Shales (average of 78 shales)
	%		%	%
Si02	2	—	20	58
Al203	45	—	60	15
Fe203	1	—	25	6
Ti02	1	—	3	1

It follows that this specimen is too poor in alumina and too rich in silics to be valuable as a source of aluminium.

Arising out of this, the Secretary pointed out that the term 'Bauxite' is not to be found in the Oxford Dictionary. On the other hand, the term 'Beauxite' is used for this mineral. The mineral was discovered by Berthier in 1821 at Les Baux, near Arles, in France. Berthier did not give a name to this newly discovered mineral, and in 1847 Dufrenoy coined the word 'Beauxite' for the mineral. However, in 1861, H. St. Clair Deville, the father of the aluminium industry, altered the spelling to 'Bauxite'. Apparently this alternative spelling is now accepted.

Mr. A. L. Meston delivered an illustrated lecture on 'Some new aspects of Tasman's visit in 1642', of which the following is an abstract:—

> The boats commanded by Pilot Major Visscher, which left Tasman's ships *Heemskirk* and *Zeehan*, to search for wood, vegetables, and water, landed at what is known now as Boomer Creek on the western side of the upper portion of Blackman's Bay, where the monument now at Dunalley should have been built.
>
> He based his conclusions on fresh cartographic evidence, a review of old maps and sketches, a consideration of botanic evidence of journals, and a close study of the topography of the coastline. He illustrated his points with lantern slides and quotations.
>
> The inner lobe of Blackman's Bay would not have been seen from the boats, Mr. Meston contended. The time taken for the journey would have made it impossible for them to have reached there. The only permanent water on shore was in Boomer Creek. Referring to the swimming ashore of the carpenter with the flag on the following day, Mr. Meston said this occurred not in Prince of Wales Bay, as believed, but at the northern end of North Bay.

20TH APRIL, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

The following were elected members of the Society:—Mr. C. N. Hope, Rev. C. C. Robertson.

Dr. V. V. Hickman drew attention to a statement by 'Peregrine' in Nature Notes published in the *Mercury* on the 19th April, and corrected a statement which said that the long-legged inhabitant of dark corners of rooms which spins a web like the spider is not a true spider. Dr. Hickman pointed out that this is a true spider and bears the name *Pholcus phalangioides*. A specimen of this species was shown on the screen and also for purposes of comparison a specimen of the *Phalangides* which children often call 'Daddy long-legs'.

Dr. J. W. Evans delivered an illustrated lecture entitled 'The Life and Achievements of Charles Darwin', of which the following is an abstract:—

> Charles Darwin, though by no means the first man to whom the concept of evolution occurred, was the first to make it credible and to cause it to be generally accepted. He was born in 1809, the son of a country doctor, and after graduating at Cambridge spent four years voyaging around the world on H.M.S. *Beagle*. During these years he had a unique opportunity of studying the fauna, flora, and geology of many countries, including Tasmania. The observations which he made during the voyage, especially those made during the *Beagle's* stay at the Galapagos Islands, raised doubts in his mind concerning the fixity of species. Shortly after his return to England in 1836, he settled in the country at Down, in Kent, where he remained, a partial invalid, for the rest of his life. His best known work, 'The Origin of Species' was published in 1859 and raised a storm of criticism. He also wrote many other books on a variety of subjects, and died in 1882. The last part of the lecture was devoted to a short account of Darwin's ideas on evolution and how they are regarded in the light of present-day knowledge.

18TH MAY, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

The following were elected members of the Society:—Miss C. Jensen, Dr. J. Gunson, Dr. J. B. G. Muir.

A paper, entitled 'Social Life in Van Diemen's Land in the Early Days' was read by Mr. J. D. A. Collier, of which the following is an abstract:—

> The paper took the form of excerpts from letters and journals by early settlers and books by visitors to Tasmania in more recent times, giving the visitors' impressions of the social life and manners of the inhabitants.
>
> Extracts were read from a letter by Mrs. Stephen Adey, wife of the first agent of the Van Diemen's Land Company, who arrived in Hobart Town in 1826. It appeared in a London Sunday newspaper in 1827, also from the Journal of Mrs. Bessie Fenton, wife of Captain Michael Fenton, who emigrated to Tasmania in 1829, and from a number of travel books and sketches written by various visitors at intervals from the early days of settlement up to the visit of Dr. Thomas Wood, author of 'Cobbers', 1939.

Mr. W. H. Hudspeth read a paper entitled 'Early Town-Planning of Hobart Town', which was prepared by Dr. C. Craig of Launceston. This was illustrated by a plan and lantern slides. It is hoped to print this paper in the Papers and Proceedings, 1944.

22ND JUNE, 1943

A meeting was held in the Society's Room on this date. Mr. A. L. Meston, Vice-President, presided.

The following were elected members of the Society:—Mr. S. E. Deegan, Mr. G. Fitzpatrick.

Professor J. R. Elliott delivered a lecture entitled 'Infinity and the Greek Mind', of which the following is an abstract:—

> If we contrast a Greek temple and a Gothic cathedral we notice that the latter has its focus outside itself; it strains upwards after something it cannot express. No Gothic cathedral can be called perfect or even always complete. But the Greek temple contains its own focus, and in such a temple as the Parthenon the perfection of the form was achieved. For the Greek ideals were real and obtainable and could be expressed.
>
> The Greeks had a three-dimensional outlook. They did not fail to encounter infinity or to point out its irrationality. But, as their art shows, they did not admit it to their scheme of things. For it removes the limits within which we are and think. Its entry into the world we known means chaos. It knows no law. It is the magic wand of space and time, and supernatural in any sphere. The Greeks demanded a rational ordered world; they thought harmony the truth of all existence. But infinity is at discord with the finite; it disorders the finite; and reason cannot cope with it.
>
> It is good for us to note the Greek attitude. For most disastrously we have let infinity into the ethical and social sphere. Ideals are not now realisable. No one expects to reach them. The real and the ideal are opposed. And linked with this outlook is the delusion that man inevitably progresses towards perfection, which is however, of course, infinitely distant. But if men put their ideals in the distant future and also believe that man is going to them anyhow a sort of paralysis sets in. They amble along. They take 'steps in the right direction', 'make substantial beginnings', achieve 'strides forward', but they do not expect to get there—that is always for the future. If someone wishes to prevent a reform, he has only to call it an ideal, and immediately the advance towards it will slacken and people will become resigned to approaching it without ever getting it. Means absorb our interest, for the ends which should absorb it are looked on as unattainable.
>
> This is no academic matter. Not the least of Hitler's attractions was his promise of immediate relief, of a new order now. He was not going to lay foundations only, but to complete the building in time for his own generation to enter. And on the other side there was democracy meandering to the world it wanted without any expectation of getting there in its lifetime. This need not and should not be. A democracy of free citizens can act swiftly and completely. But like Achilles pursuing the tortoise in Zeno's paradox we take an infinite number of steps to reach a finite end because we do not regard it as finite. We might learn from the ancient Greeks to keep infinity in its place and remember that when we have run 110 yards a single stride of forty inches will give us the tortoise.

20TH JULY, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

The following were elected members of the Society:—Dr. F. C. Robertson, Mr. B. A. Sheppard.

Dr. Joseph Pearson delivered an illustrated lecture entitled 'Concealing Coloration and Camouflage', of which the following is an abstract:—

Colours of organisms may be due to pigments such as chlorophyll, haemoglobin, melanin, etc., to diffraction due to the structural character of a substance (mother of pearl) or a combination of both (scales of butterflies, wing covers of beetles, etc.).

The lecturer proposed to deal mainly with the coloration due to melanin and other pigments in chromatophores of the skin.

Coloration of the body was either temporary or permanent.

Temporary or Changeable Coloration

Chiefly found in crustacea, cephalopods, and cold-blooded vertebrates.

Chromatophores generally found in dermis of cephalopods and crustacea. In cold-blooded vertebrates they may occur in either the dermis or epidermis, or in both.

The chromatophore of the crustacea is a syncytium and generally contains more than one pigment. In cephalopods the chromatophore is a highly specialized organ. In the vertebrates it is unicellular and has a branched structure and usually possesses only one kind of pigment, though different chromatophores contain black, yellow, blue, and red pigments. In its 'expanded' condition the chromatophore is a richly branched structure. In the 'contracted' condition the pigment is concentrated in a small central mass. It is probable that the shape of the cell is permanently branched, but the melanin moves to and from the centre to the peripheral branches in response to differences of light intensity. The melanophores are the most important as they are concerned with changes from a dark to a light colour.

Most experimental work on the physiology of colour change has been done on the vertebrates.

The eyes play an important part in colour change. If a normal animal is placed on a dark background the melanophores 'expand' and the animal becomes darker; on a light background they 'contract' and the animal becomes lighter. These responsive changes do not happen in the dark or if the eyes are removed or masked. Under such conditions paleness results. Cave animals which live in perpetual darkness lose their melanin and are pale in colour.

Mast found that flounders react to pattern as well as colour. If the fish is laid with its body on a black background, but the head, including the eyes, on a white background, the body colour becomes pale. If the animal is placed under reversed conditions the body becomes dark.

Townsend found that certain tropical fishes responded very quickly to changed conditions of background and illumination.

Hogben's classical researches have clarified some of the problems of vertebrate colour changes. He distinguished three different kinds of responses—

(1) *Dermal response*, which was independent of the eyes. Probably the most archaic type in which the melanophores showed a reflex response to the action of light.

(2) *Ocular response*

(a) In darkness no part of the retina is stimulated.

(b) On a black background with strong illumination, only the 'floor' of the retina is stimulated. A reflex stimulation of the median lobe of the pituitary results in the production of hormone B. This reaches the melanophores through the blood stream and causes the melanin to migrate from the centre of the chromatophores to the peripheral branches, thus producing a dark colour in the skin.

(c) On a white background with strong light all parts of the retina are stimulated. As before, hormone B is produced by stimulation of the floor of the retina. The stimulation of the side walls of the retina reacts on the anterior lobe of the pituitary, thus producing hormone W. The action of hormone W over-rides that of hormone B. The result on the melanophores is to cause centripetal migration of the melanin, thus producing a paleness in the skin.

Crustaces show a somewhat parallel ocular reaction and hormones produced in glands at the base of the eye stalk effect the migration of pigments in the chromatophores.

Permanent Coloration

Birds and mammals do not possess chromatophores, but melanin may be present in the epidermis, hair, and feathers.

Low temperatures strongly inhibit the production of melanin. White fur or feathers found in arctic animals not due to presence of white pigment but to absence of melanin.

Arid conditions also inhibit to some extent the production of melanin, hence the neutral colours of many desert animals.

Humid tropical climates favour the production of pigment. Hence the rich colours of many tropical animals.

The white colour of many polar animals and the neutral browns of many desert forms are primarily physiological in origin and are probably not due to adaptive coloration.

The general response of melanophores or melanin granules in the skin to different degrees of light intensity is well established. Melanin production varies in direct proportion to the intensity of light. Hence the upper side of an animal which receives more sunlight is generally darker than the lower side which is not so well illuminated. Moreover melanin acts as a screen for ultra violet rays and probably assists in regulating the body temperature in 'cold-blooded' animals. Many animals have their high lights and shadows neutralized. This 'countershading' has the effect of making a solid animal look flat. This again is primarily the result of physiological reactions rather than a colour response to an animal's background. Thus the colour phases of an animal may have two distinct survival values under natural selection both working independently but along the same lines. Some biologists are perhaps inclined to attach too much significance to the selective value of so-called concealing coloration.

Perhaps the only way to assess the value of colour schemes as protective devices would be to carry out definite experiments in each specific case. Three sets of such experiments made by Davenport (chicks), di Cesnola (praying mantis), and Sumner (Gambusia) proved as far as they went that coloration which fitted with a particular background had a definite survival value.

Distractive Coloration

Examples were given from fishes and butterflies to show how structural imitation and colour markings (e.g., eye spot) might serve to distract the predator from the most vulnerable parts of the body of the hunted animal.

Simulative Coloration

Examples were given (e.g., leaf insect, leaf butterfly, stick insect, frogmouth, etc.) of animals which imitate the appearance of inanimate things.

Disruptive Coloration

Many animals have a distinctive colour pattern which tends to break up the shape of the body. Thayer drew attention to this as well as to the concealment value of countershading. He weakened his case by overstating it and, in some instances, by suiting his background to the characteristic pattern of the animal, thus reversing the natural process. In consequence he laid himself open to criticism, and Theodore Roosevelt, who had considerable first-hand knowledge of wild life, castigated him severely. In spite of this, Thayer's concepts form the basis of modern ideas about the value of concealing coloration, but Roosevelt was probably right in insisting on the value of other protective qualities which are practised by animals in nature, e.g., the faculty of making the best use of natural cover, the art of keeping still, cunning, speed, and perhaps above all, the high development of the senses.

The lecture concluded with a brief reference to Batesian and Müllerian mimicry using as examples of the Batesian type the Ceylon forms *Papilio polytes* which has three polymorphic female types one like the male, and two which mimic *Papilio artistolochiae* and *P. hector* respectively. (These latter may be regarded as models.) Ceylon forms were also given as members of a Müllerian mimicry ring, viz., *Danais plexippus* ♂ and ♀, *D. chrysippus* ♂ and ♀, *Elymnias undularis* ♀, and *Hypolimnas misippus* ♀. The males of the two latter species have a different colour pattern from the females.

17TH AUGUST, 1943

A meeting was held in the Society's Room on this date. Mr. A. L. Meston, Vice-President, presided.

Mr. R. H. L. Roberts was elected a member of the Society.

The Secretary reported to the Society that on August 4th, the date of the completion of ten years of office by the President, His Excellency the Governor, he had sent a telegram to His Excellency. A copy of the telegram and of His Excellency's reply is contained in the Annual Report (p. 236).

Dr. P. A. Maplestone delivered a lecture entitled 'Factors influencing the distribution of certain Helminths'.

14TH SEPTEMBER, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

Mr. E. E. Unwin delivered an illustrated lecture entitled 'Biology and Education', of which the following is an abstract:—

> The lecture, which was illustrated with lantern slides, dealt firstly with the personal experience of the lecturer. Beginning with the background of natural history, encouraged in the Quaker boarding schools in England as a leisure-time pursuit (1891-6), this interest during the University period caused a switch over to biology as a major subject for degree work. Then came the rise of nature study as a school subject (1901-4), at first against considerable opposition. This led to further association with Professor L. C. Miall at the University of Leeds in nature study for teachers, as well as research work. Returning to school teaching the development of biology as a secondary school subject followed, at two English schools and since 1924 in Hobart.
>
> The second part of the lecture dealt with the values of biology as a school subject and the various teaching methods employed.

Centenary Celebrations

(Also see page 223)

12TH OCTOBER, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

About 225 members and guests were present.

Mrs. A. Dowling was elected a member of the Society.

The President, His Excellency the Governor, gave the opening address dealing with the history and work of the Society. (See page 224.)

Dr. G. Mackaness gave an illustrated lecture entitled 'Captain William Bligh's Discoveries in Tasmania'. This lecture has not been printed in the present volume as the paper has been privately printed for Dr. Mackaness by D. S. Ford, Printers, Reservoir-street, Sydney. Copies of this paper may be obtained from Dr. Mackaness. A copy has also been presented to the Royal Society's Library.

The following is a brief abstract of the lecture:—

> Captain Bligh made four visits to Tasmania. The first visit was in 1777 with Captain Cook in H.M.S. *Resolution* when Adventure Bay was visited. Practically nothing is known of Bligh's personal association with Cook, though it is certain that Bligh was responsible for many of the charts made on this voyage.
>
> The second visit was made in 1788 when Bligh was Commander of the H.M.S. *Bounty* (first Breadfruit voyage). On this occasion the same anchorage in Adventure Bay was used.
>
> The third visit was paid in 1792 when Bligh, with H.M.S. *Providence* and H.M.S. *Assistant*, paid yet another visit to Adventure Bay (second Breadfruit voyage).

The fourth and last visit was not an exploratory one, but was occasioned by his hurried departure from Sydney in H.M.S. *Porpoise* in 1809 after his deposition and arrest. This resulted in his visiting Hobart Town and the Derwent Estuary where he stayed for nearly a year and became a thorn in the flesh of Governor Collins.

The lecturer discussed observations made by Bligh and his associates regarding the fauna and flora of the country and dealt with many interesting facts about the aboriginals. He also discussed Bligh's few geographical discoveries in the Adventure Bay area and the errors which Bligh made in wrong geographical identifications and interpretations.

A vote of thanks to the lecturer was proposed by Mr. A. L. Meston, Senior Vice-President, and seconded by Dr. W. L. Crowther, Vice-President, and carried unanimously.

14TH OCTOBER, 1943

A special meeting was held on this date (Centenary Day). Three hundred and ten members and guests attended.

The President, His Excellency the Governor, presided.

His Excellency opened the meeting with an introductory speech (see p. 224). Congratulatory messages, which had been received from various scientific bodies were read by the Secretary (see p. 229).

The President then presented the Centenary Medals to Dr. Mackaness and Professor Ashby (see p. 227).

Professor Ashby delivered an illustrated lecture entitled 'A Century of Ideas on Evolution'. This lecture is printed in full in the present volume (see p. 159).

A vote of thanks was proposed by Dr. Gordon, Lecturer in Botany in the University of Tasmania, and seconded by Professor Hickman, Professor of Biology, University of Tasmania.

At the conclusion of the proceedings a conversazione was held in the Art Gallery.

16TH NOVEMBER, 1943

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, presided.

The following were elected members of the Society:—Mr. J. M. Counsel, Mr. J. B. Piggott, Mr. N. H. White, and Mr. C. E. Wilson.

The following papers were laid on the table and taken as read:—

1. Some Australian Apneumonomorphae, by Professor V. V. Hickman.
2. Supplementary History of the Society, completing the period 1913-1943, by Miss Somerville.

The following accessions were recorded:—Knopwood Papers, from Miss M. Hookey; a copy of the Melbourne Advertiser, 8th January, 1838, from Mr. W. E. Masters.

A paper entitled 'As we were' was read by Mr. W. H. Hudspeth, of which the following is an abstract:—

The lecturer dealt with various aspects of life in Tasmania in the year 1827 as disclosed in the columns of *The Hobart Town Gazettes* for that year. Among other points touched upon were the following:—Dr. James Ross and his editorial difficulties; The state of Society in Hobart Town; Fashions and habits of the times; Educational facilities; The first Race Meeting in the Colony; The Drink Traffic; First beginnings of the Tourist Traffic; Trials of the Country Settler; Prominent Military Officers and Civilians; State of the Wool and Wheat Industries; The Lahour Market; Convicts, Bushrangers, and Aborigines; Lt. Governor Arthur and his influence on the Community.

A discussion then took place on the Society's achievements, its service to the community, and its future policy. After several members had spoken, it was decided that a special meeting be convened in January to discuss the matters which had been considered at the meeting and to formulate proposals which could be placed before the Society.

Northern Branch

Annual Report, 1943

Meetings of the 1943 session, other than the Annual Meeting and Public Lecture, were held in the Lecture Room at the Queen Victoria Museum and Art Gallery.

31ST MAY, 1943

Annual Meeting and Public Lecture

The Annual Meeting for 1943 was held in the class-room, Public Library, at 7.30 p.m. The Branch President, Mr. F. Smithies, presided.

The following were elected officers for 1943:—

President: Mr. F. Smithies.

Council: Mr. F. Smithies (Chairman), Mr. W. R. Rolph, Mr. D. V. Allen, Mr. G. McKinlay, Hon. Tasman Shields, Mr. J. R. Forward, Mr. J. E. Heritage, Dr. R. A. Scott, Major R. E. Smith.

Hon. Secretary: Mr. E. O. G. Scott.

Hon. Auditor: Mr. J. R. Forward.

The Annual Report and the Statement of Accounts were read and adopted; the latter recorded a credit balance of £19 4s. 1d.

The Annual Meeting was followed, at 8 p.m., by an illustrated public lecture, 'The Geographical Distribution of Animals', by Dr. J. Pearson. The lecture was given in the main hall, Public Library; there was an attendance of about one hundred. An abstract follows.

In introducing his subject, Dr. Pearson spoke of the interest attached to the problem of the occurrence of different types of animals in different parts of the world in the light of the theory of organic evolution; and pointed out that with the abandonment of the older idea of the separate creation of each species the necessity arose of finding plausible explanations of the observed facts of continuous and discontinuous distribution. Modes of distribution from an originating centre were passed in review, and their relative importance assessed; the effectiveness of any given agency is obviously closely correlated with the type of animal concerned. Distribution is hindered, or even prevented, in various ways. Thus, terrestrial mammals commonly migrate slowly, and mountains, deserts, and geographical features giving rise to marked differences of temperature in adjacent regions are generally effective barriers; again, the Isthmus of Panama prevents the mingling of those elements of the eastern and western marine faunas that are capable of living only in warm seas; and so on.

After a brief survey of some general principles, Dr. Pearson showed an extensive series of lantern slides. The principal Zoogeographical regions were first delimited, their relationships in former geological times were considered, and the characteristic elements of their present-day faunas were enumerated. With the aid of maps projected on the screen an investigation was then made of some of the more notable problems of geographical distribution presented by specific groups of animals—groups dealt with included ratites, marsupials, tapirs, elephants,