Abstract of Proceedings

1935

11TH MARCH, 1935

Annual Meeting

The annual meeting was held at the Society's Rooms, Tasmanian Museum, on this date. In the absence of the President, His Excellency Sir Ernest Clark, K.C.B., C.B.E., Mr. W. H. Clemes presided.

The following were elected as members of the Council for 1935:—Mr. H. Allport, Mr. S. Angel, Mr. W. H. Clemes, Dr. W. L. Crowther, Mr. V. V. Hickman, Dr. A. N. Lewis, Mr. F. E. Ward.

The President not being present, the appointment of the new Vice-Presidents was deferred until next meeting.

Mr. Walter E. Taylor was appointed Hon. Auditor.

The following members were elected:—Miss E. Atkinson, Mr. J. H. B. Ewart.

Mr. R. W. Legge presented to the Tasmanian Museum, through the Royal Society, the skull of a juvenile Tasmanian aboriginal. Presentation to the Society was also made by Mr. S. K. Johnstone of a list of historical references to ships and seafaring men sailing from Hobart in the old days.

Mr. E. E. Unwin, M.Sc., gave an illustrated lecture on 'The Breathing of Animals', of which the following is an abstract:—

> Oxygen is one of the primal needs of all living organisms. The vast majority obtain this oxygen for the fires of life from the gas in the air or dissolved in the water.
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> The story of the breathing of animals is the story of adaptation, and is one of the chapters in the story of evolution.
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> The main story begins with simple forms breathing through the surface in contact with water, and goes on to the acquisition of gills—special thin-walled organs developed in relation to a blood circulation, with oxygen storage media.
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> The stories of isopods and insects were dealt with more fully, as they show the wonderful adaptability of creatures to a change in their normal environment.
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> The breathing of the mollusca, fishes, frogs, birds, and mammals was dealt with in brief outline, giving some idea of the gradual change from aquatic to aerial life, and the increasing complexity and more active life demanding more efficient breathing arrangements.
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> The lecture was illustrated by about 80 slides.

8TH APRIL, 1935

A meeting was held in the Society's Rooms, the President, His Excellency the Governor, presiding.

Under Rule 3 His Excellency the President nominated the following two Vice-Presidents:—Mr. W. H. Clemes, Mr. F. E. Ward.

The following members were elected:—Mrs. J. Pearson, Mr. C. E. Radcliff, Mr. J. W. Evans, Mr. John Reynolds, Mr. Wilfred Hudspeth, Mr. F. E. Wallace.

Mr. W. H. Hudspeth delivered an illustrated lecture entitled 'The Experiences of a Settler in the Early Days of Van Diemen's Land.' (See this Volume, p. 139.)

13TH MAY, 1935

A meeting was held in the Society's Rooms, Mr. W. H. Clemes presiding.

The following members were elected:—Mr. E. Parkes, Mr. D. A. McNeice.

Mr. K. M. Dallas, B.Com., gave a lecture entitled 'The Study of Economic Science,' of which the following is an abstract:—

THE STUDY OF ECONOMIC SCIENCE

'Economics is a branch of Biology, broadly interpreted.' (Alfred Marshall.)

Economic Science studies certain *aspects* of human behaviour—more particularly the manner in which Value measures human motives—or 'human behaviour as a relationship between Ends and Scarce Means which have alternative uses.' (Lionel Robbins.)

The current notion that Economics is concerned with a narrow materialism, with Man and his acquisitive instincts, with discovering laws based on self-interest of an Economic Man, is one hundred years behind the present development of the Science. The definition given shows that the science is concerned with certain *aspects* of all social phenomena, not with a separate body of facts. All social sciences study the same facts, but in different aspects or relationships. 'The Economist must also be "philosopher, mathematician, politician, historian"—in some degree.' (J. M. Keynes.)

The central concept of the Science is Value. Two centuries of deductive reasoning, approaching the concept from the angles of Cost of Production and from Utility, and Final or Marginal Utility, have gone to the building of an organon or method of reasoning—not a body of final, concrete truth, but an engine for the discovery of concrete truth. The theory of Value must suffice to explain the human motives behind all such phenomena as prices, wages, interest, rent; behind saving, spending, lending, borrowing. The economist specializes in the study of certain aspects of these phenomena, those aspects dealing with use of Scarce Means to attain Ends which are either social and collective or individual, but is not unaware that these aspects are influenced by motives, religious, political, altruistic—motives which may cause scarce means to be applied in ways which are wasteful and uneconomic from a narrow material point of view.

The 'laws' of Economic Science are statements of 'tendency' expressed in the indicative mood. Their importance is always *relative* to the circumstances of place or time, and to the strength or weakness of other motives, other aspects than those of Value,—of Ends and Scarce Means.

In this broad sense the Generalizations of Economics are valid alike for the solitary Crusoe, the society of private profit and enterprise, the ordered, regimented society of Soviet Russia, and for the never-to-be-realized classless state of Communism, in which the 'State shall wither away,' and want, sin, and suffering shall be no more.

10TH JUNE, 1935

A meeting was held in the Society's Rooms, the President, His Excellency the Governor, presiding.

The following member was elected:—Miss C. Jensen.

Mr. E. O. G. Scott delivered an illustrated lecture entitled 'Some Aspects of the Study of Tasmanian Fishes,' of which the following is an abstract:—

> In the course of a general review of the subject, the speaker dealt with six aspects, as follow. (*a*) *Definitions.*—General preliminary remarks were based on lantern slides illustrating the various connotations of the word 'fish,' external features, outline of classification, and scope (by families) of the Tasmanian fauna relative to the Australian. (*b*) *History.*—Tribute was paid to the work of the late Clive Errol Lord, whose memory they were met that evening to honour; and the history of ichthyology in Tasmania briefly traced successively through the periods 1642-1803, 1804-1833, 1834-1842, 1832 to the present time. (*c*) *Commercial.*—The backward positions of Australia and of Tasmania relative to other States were made evident by slides showing relative value of Australian production, number of ships, value of production (total, and *per capita*) in States, consumption per head, value of imports and exports. Observations were made on the commercial clupeoid fishes, and the vast possibilities of our pelagic fisheries indicated. (*d*) *Sporting.*—The history of the introduction of Salmonidae to Tasmania was briefly recalled. The urgent need for a proper scientific investigation of our fisheries was emphasized, and some general remarks were made on the individual problems presented by our lakes and rivers, and on such relevant ecological factors as animal communities, ecological gradient and succession, daily and seasonal rhythms, and food-chains. Slides were shown illustrating the correlation of physical and chemical factors of the environment with one another and with fish-food and fish, longitudinal distribution in accordance with physiographical conditions, rapids community, food-cycle in small lake, principal items of trout-food, trout leaping falls, large rainbow trout. (*e*) *Methods of Research.*—Some general observations on the nature, distribution, and special problems of the Galaxiidae, or native trout, were followed by some remarks on the speaker's investigations on the family. Slides shown included methods of trapping, characteristics of Galaxiid genera, diagnostic features of species, local distribution (with incidental notes on chief Tasmanian zoogeographic regions), graphs of scope of Tasmanian Galaxiid fauna, rate of growth, ability to survive out of water, &c. (*f*) *General.*—A series of slides was shown, illustrating some interesting and peculiar fishes, chiefly from Tasmanian waters.

At the conclusion of the meeting His Excellency the Governor unveiled a memorial tablet in the Museum to the memory of the late Clive E. Lord. Dr. Crowther and Dr. Lewis spoke, and expressed their tribute to the memory of Mr. Lord.

8TH JULY, 1935

A meeting was held in the Society's Rooms, Mr. F. E. Ward presiding.

Mr. W. E. Maclean delivered an illustrated lecture entitled 'Hydro-Electric Developments in Tasmania,' of which the following is an abstract:—

> The lecturer referred to the demand for electrical power which arose both during and after the Great War. This demand grew at such an amazing rate that the great industrial nations were compelled to take stock of their power resources, particularly as power development was of vital importance to the proper economic development of the world. Electricity has changed the whole economic future of industry because of three important factors:
>
> 1. It supplies a motive power cheaper and more elastic than any other type.
> 2. It is more efficient than steam or gas, and has led to a reduction in fuel consumption per unit of manufacture.
> 3. It is capable of more diversified use than any other form of power, and can be automatically controlled.

The lecturer then discussed the problem of securing the uniform consumption of power to enable the authorities to sell its energy at a low price.

In 1929 the survey of the potential waterpower available in Australia for hydro-electric services showed that 74 per cent. of this potential waterpower was located in Tasmania. Tasmania had 7000 horsepower per thousand of population; a figure only exceeded by the Belgian Congo and the Belgian Mandated Territory in West Africa, with 8000 horsepower per thousand.

The State has many of the raw materials used in industry, such as copper, lead, zinc, and limestone; and the supply of timber for pulp and paper making is almost unlimited. With the advantage of a cheap electric power supply at hand, no opportunities should be lost of developing these industries.

Since 1914, when the Hydro-Electric Department came into being, several important contracts have been made for bulk supplies of power to important industries. Extensions have been made to country towns and municipalities. The Waddamana plant has ben enlarged from 10,000 to 66,000 horsepower, and the Shannon Station of 12,000 horsepower has been completed. The latest development was that the third unit of the State's hydro-electric system was now being built, and it would add 66,000 to the 78,000 already existing.

The lecturer concluded by showing a series of slides of various sections of the hydro-electric works at the Great Lake, Waddamana, Tarraleah, and elsewhere.

12TH AUGUST, 1935

A meeting was held in the Society's Rooms, Mr. W. H. Clemes presiding.

The following members were elected:—Mr. George Dick, Mr. Gilbert McKinley, Mr. Basil Rait.

Dr. Joseph Pearson delivered an illustrated lecture entitled 'Heredity,' of which the following is an abstract:—

The lecturer summarized our present knowledge of the physical basis of heredity. The elements of germ plasm known as genes are responsible for the characteristics of an organism. Just as the genes are handed on from generation to generation as units which do not lose their identity, so the characters produced by them remain unchanged though they may be suppressed. Thus, maternal and paternal characteristics which are handed on to the child do not become blended. For example, the offspring of a homozygous blue-eyed father and a homozygous brown-eyed mother will be heterozygous brown-eyed, although their cells will also carry the genes for the blue-eyed character. In this case brown is dominant, and blue is hidden or recessive. Each heterozygous brown-eyed offspring will have ripe germ cells of two kinds, one half carrying the genes for blue and one half carrying the genes for brown. This bears out the phenomena described by Mendel. The existence of incomplete dominance is presented by Andalusian fowls, the well-known blue Andalusian being a hybrid produced from a homozygous white and a homozygous black.

With regard to sex, it is found that normally in the female two X-chromosomes are present, whereas in the male there is only one X-chromosome. When the germ cells become mature each egg will be found to contain one X-chromosome, while only one-half of the male germ cells will contain an X-chromosome. Thus, if an egg is fertilized by a sperm containing an X-chromosome, a female is produced, but if by a sperm lacking the X-chromosome a male will be produced. Like the ordinary chromosomes, the X-chromosomes bear genes. These genes will, therefore, follow the sex, and thus we have sex-linked characters, which are of great importance to breeders of domestic animals.

In human beings, colour-blindness is sex-linked. If the mother is colour-blind and the father normal, all the sons will be colour-blind and all the daughters normal. On the other hand, if the father is colour-blind and the mother normal, all the offspring will be normal, though all the daughters will be 'carriers,' and will be capable of handing on the defect in the next generation.

The lecturer concluded by indicating how the discoveries of the physical basis of inheritance might be applied to human genetics and eugenics.

9TH SEPTEMBER, 1935

A meeting was held in the Society's Rooms, Mr. F. E. Ward presiding.

The following members were elected:—Mr. G. S. Carruthers, Mr. E. R. Hudson.

Mr. V. V. Hickman gave an illustrated lecture entitled 'The Cryptozoic Fauna of Mount Wellington,' of which the following is an abstract:—

THE CRYPTOZOIC FAUNA OF MOUNT WELLINGTON

The cryptozoic fauna of Mount Wellington is rich and varied, but apart from the Insecta very few of the animal groups comprising the fauna have received much attention from students.

Sixteen Land-planarians have been recorded from Tasmania, and six of these are known to occur under logs and stones on the mountain. The most common species is *Geoplana tasmaniana*, which was first discovered by Charles Darwin, when he visited Tasmania in H.M.S. *Beagle* during February, 1836. This planarian has the shape of a narrow leaf, about 35 mm. long. Another species often found at the Cascades is *G. typhlops* Dendy, which grows to a length of 220 mm. It is our largest land-planarian, and is quite blind. Its black oval egg-capsules measure 10 x 5 mm., and are made during August and September. Other species found on the mountain are *G. diemenensis* Dendy, *G. mortoni* Dendy, *G. quinquelineata* Fletcher and Hamilton, and *G. nicholsi* Dendy.

Associated with the Geoplanarians is an interesting Land-nemertean, which appears to be a Tasmanian variety of the Victorian *Geonemertes australiensis* Dendy. When disturbed it shoots out a long proboscis, which functions not only as a weapon of defence, but also as an aid to rapid locomotion, for the Nemertean is able to pull itself along by means of the organ.

Terrestrial Mollusca are well represented on Mount Wellington. Five species belong to the genus *Flammulina*, and three to *Endodonta*, whilst single species belonging to the genera *Caryodes*, *Rhytida*, *Delos*, and *Helicarion* have also been recorded from the mountain. The largest species is the Mountain Snail, *Caryodes dufresni* Leach. The Thrush, *Geocichla macrorhyncha* Gould, feeds largely on this snail. The most common snail is the beautiful *Helicarion cuvieri* Ferrussac. It has a yellowish-brown shell, which is glassy and transparent.

Tasmanian Oligochaeta have not received the attention which they deserve, and the mountain offers a fruitful field for research in this group. The Hirudinea are represented by the little land-leech, *Philaemon pungens* Blanchard. It is not a strictly cryptozoic animal. During the winter, however, it hides under logs, and in November and December makes its egg capsules. These are rounded, and have a honeycombed outer surface. The young leeches emerge from the capsules in March and April.

Twelve Centipedes have been recorded from Tasmania. Those which occur under logs and stones on Mount Wellington are usually long, slender species, of a yellow or reddish colour. They are blind forms, belonging to the Geophilomorpha, the most common species being *Pachymeroides alter* Chamberlin and *Pachymerellus zygethus* Chamberlin. The Lithobiomorpha are represented by *Henicops maculatus* Newport. There are ten Diplopods reported as occurring in Tasmania. Three species are frequently met with on the mountain, namely, *Amastigogonus tasmanianus* Brolemann, *Tasmanodesmus hardyi* Chamberlin, and at higher altitudes a member of the genus *Procyliosoma*, which has the habit of rolling itself into a ball like an Isopod.

One of the most abundant members of our cryptozoic fauna is the terrestrial Amphipod, *Talitrus sylvaticus* Haswell, which is found from the foot to the summit of the mountain, and usually occurs in moss or among fallen leaves. The Isopod *Oniscus punctatus* Thomson is also plentiful.

The dominant group of cryptozoic animals is the Arachnida, which includes Spiders, Mites, Harvestmen, Scorpions, Pseudoscorpions, &c. All of these groups are well represented on Mount Wellington, but very few of the animals belonging to them have been studied. The most interesting spider on the mountain is the Cave Spider, *Ectatosticta troglodytes* (Higgins and Petterd). Under stones along the banks of the New Town Creek, where it

flows down the mountain, the little spider *Symphytognatha globosa* Hickman makes its conical egg-sac. The female of this species is unique in lacking the tactile appendages or pedipalps.

The only scorpion known to occur on the mountain or elsewhere in Tasmania is the familiar *Cercophonius squama* (Gervaise).

Twelve Harvestmen or Opiliones have been recorded from this State. Of these, *Peckhamius pectinatus* (Pocock), *Lomanella raniceps* Pocock, and *Pantopsalis tasmanica* Hogg are frequently found in the gullies of Mount Wellington.

The cryptozoic Insects of the mountain have probably received more attention from students than is the case with other groups. Stag-bettles belonging to the genus *Lissotes* are often found under logs. Carnivorous Carabids are also plentiful, a large shining black species, *Percosoma carenoides* White, occurring at the Cascades. On the summit of the mountain the little black earwig *Euboriella tasmanica* Bormans is not uncommon under stones.

To the biologist one of the most interesting cryptozoic animals on the mountain is *Ooperipatus insignis* Dendy. The animal somewhat resembles a small caterpillar and has fourteen pairs of short legs. It captures its prey by means of an entangling sticky secretion, ejected with considerable force from two apertures, one on each side of its head. This little animal has survived from a remote age, and has retained many primitive features in its anatomy, which help us to bridge over the interval between the Annelids and the Arthropods.

Cryptozoic animals have slowly evolved in harmony with the environment in which they have lived during long periods of time. Man's activity in cutting tracks and roads through their haunts, the bush-fires which accompany man's progress, and the introduction of exotic birds will eventually bring about the extermination of many of these interesting forms of life, and the opportunity of studying them will be gone for ever.

16TH OCTOBER, 1935

A meeting was held in the Society's Rooms, the President, His Excellency the Governor, presiding.

The following members were elected:—Mr. J. P. Piggott, Mr. S. H. Wellington, Miss Z. G. Ryan.

Reference was made to the loss the Society had sustained in the death of Sir Elliott Lewis. A wreath had been sent by the Council on behalf of the Society, and also a letter of condolence to Lady Lewis and family. His Excellency asked the meeting to confirm the action of the Council, and the motion was passed in silence, the meeting standing as a mark of respect to Sir Elliott Lewis.

Professor A. L. McAulay and Mr. R. G. Brett delivered an illustrated lecture on 'Problems Regarding Tasmanian Eucalypts,' of which the following is an abstract:—

Some of the difficulties of founding the study of Tasmanian eucalypts on recognized botanical species were discussed, and it was suggested that the best starting-point was a search for jordanons. Some jordanons of *E. Gunnii* and related species were given as examples. The cider gum of the Great Lake plateau was mentioned as one, and it was suggested that the trees labelled *E. Gunnii* in National Park constitute a jordanon of *E. Johnstoni*.

Species were next discussed in which there appears to be a continuous series of types, between extremes which have completely different characters. Work was suggested which should give evidence as to whether this condition was due to hybridisation or to variability in the species. *E. Risdoni*, *E. Tasmanica*, and *E. pauciflora* were cited in illustration.

11TH NOVEMBER, 1935

A meeting was held in the Society's Rooms, Mr. W. H. Clemes presiding.

The following members were elected:—Mr. George Fitzpatrick, Major R. G. Smith, Mr. T. Jacobs.

Upon the motion of Dr. Crowther, supported by Mr. E. A. Unwin, the Society's Medal was awarded to Dr. A. N. Lewis—Mr. W. H. Clemes making the presentation.

Dr. Lewis delivered an illustrated lecture entitled 'Our Pulsating World: The Influence of Earth Movements on Human Development.' (See this Volume, p. 1.)

Northern Branch

Annual Report, 1935

The activities of the Northern Branch during 1935 comprised: Annual meeting, followed by public lecture; four ordinary meetings; seven Council meetings; erection and unveiling of memorial pillar in Royal Park.

All meetings were held at the Public Library, Launceston.

20TH MAY, 1935

Annual Meeting

Mr. W. R. Rolph presided. The following officials were elected for 1935:—

President: Mr. A. L. Meston.

Council: The President, Hon. Tasman Shields, Mr. W. R. Rolph, Mr. R. S. Padman, Mr. F. Heyward, Mr. D. V. Allen, Mr. J. E. Heritage, Mr. F. Smithies, Mr. J. R. Forward, and the Secretary.

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

Hon. Auditor: Mr. R. S. Padman.

The statement of accounts, which disclosed a credit balance of £40, was read and adopted.

Public Lecture

The annual meeting was followed at 8 p.m. by a public lecture, 'Tasmania's Scenic Assets,' by Mr. F. Smithies. In the unavoidable absence of the Hon. the Chief Secretary (Mr. T. D'Alton), the Hon. the Minister for Lands and Works (Major T. H. Davies) presided. There was an attendance of about 350.

24TH JUNE, 1935

The President, Mr. A. L. Meston, presided.

Nominations for membership: Miss Zetta Ryan, B.A.; Mr. G. C. McKinlay.

Illustrated lecture: 'Aboriginal Carvings in Tasmania,' by A. L. Meston, M.A.

Discussion: Messrs. D. V. Allen, C. W. Calver, and E. Scott took part in the discussion following the lecture.

15TH JULY, 1935

The President, Mr. A. L. Meston, presided.

Nomination for membership: Mr. E. R. Hudson, B.Sc., B.Ag.

Illustrated lecture: 'Tasmanian Fishes and Fisheries,' by E. O. G. Scott, B.Sc.

Discussion: Messrs. E. R. Hudson, Littler, and A. E. Evershed took part in the discussion following the lecture.

19TH AUGUST, 1935

The President, Mr. A. L. Meston, presided.

Nomination for membership: Mr. S. Wellington, B.Sc.

Illustrated Lecture: 'The Anti-Transportation Movement in Tasmania,' by A. L. Meston, M.A.

Discussion: Messrs. J. R. Palamountain, J. R. Forward, W. D. Weston, S. Wellington, A. E. Evershed, and E. Scott took part in the discussion following the lecture.

30TH SEPTEMBER, 1935

The President, Mr. A. L. Meston, presided.

Nominations for membership: Major R. E. Smith, Mr. J. Jacobs, B.A.

Papers:

(*a*) 'Extinct Tasmanian Pines: Parts 1 and 2,' by H. H. Scott, F.R.S.A.

(*b*) 'Observations on Visits of the Tasmanian Aborigines to the Hunter Islands,' by A. L. Meston, M.A.

(*c*) 'Observations on Fishes of the Family Galaxiidae: Part 1,' by E. O. G. Scott, B.Sc.

Exhibits: On behalf of Mr. L. C. Willes, the Secretary exhibited a nephrite adze found at East Devonport, and believed to be of New Caledonian origin. A polished stone axe from the collection of the Queen Victoria Museum, found at St. Leonards in 1895, and believed to be of New Zealand origin, was also made available for inspection.

Discussion: Dr. Anderson and Messrs. J. Jacobs, King, Isaacs, and C. W. Calver took part in the discussion following the reading of the papers.

Council Meetings

Meetings of the Council were held on 15th April, 29th May, 26th June, 24th July, 21st August, 11th September, and 31st October.

Memorial Pillar

On 18th September, 1935, at 3.30 p.m., in the presence of a large and representative gathering, there was unveiled a memorial pillar, set up in the Royal Park, Launceston, by the Northern Branch to mark the site of the observatory of the late Mr. A. B. Biggs, where the officially accepted determination of the latitude and longitude of Launceston was made, and to commemorate the astronomical work of Mr. Biggs, a former member of this Society, and a frequent contributor to its 'Papers and Proceedings.'

In the unavoidable absence, through indisposition, of the President of the Society, His Excellency Sir Ernest Clark, K.C.B., C.B.E., the President of the Branch, Mr. A. L. Meston, M.A., performed the unveiling ceremony, supported by His Worship the Mayor of Launceston (Alderman E. E. Von Bibra) and by Col. G. E. Harrap, representing the Historical Society of Tasmania.

Mr. F. Heyward, F.R.A.I.A., and Mr. D. S. Jackson presented the plans and specifications, and the pattern for the inscription-tablet, respectively.

Annual Report of the Education Section of the Royal Society, 1936

Seven meetings were held during the year, from April to October, inclusive. The average attendance was 7·1.

At the annual meeting Mr. H. T. Parker was elected President for the ensuing year.

The papers presented and the discussions arranged during the year were:—

May 27: Mr. H. T. Parker, "The New Spelling Book."

June 24: Mr. F. Watts, "An Experiment in the Education of Gifted Children."

July 22: A Round-Table Discussion was opened by Mr. A. A. Vollprecht on "Scoring the Scholarship Examination."

August 19 and September 23: A Round-Table Discussion was opened by Mr. H. T. Parker on "Broadcasting in the Schools."

October 28: Mr. C. McShane, "An Intelligence Survey in Tasmanian Schools."

Walter E. Shimmins, Government Printer, Tasmania.