# Abstract of Proceedings

16TH FEBRUARY, 1939

*Annual Meeting*

The Annual Meeting was held in the Society's Room, Tasmanian Museum. The President, His Excellency the Governor, Sir Ernest Clark, K.C.B., K.C.M.G., C.B.E., presided.

The following were elected Office-bearers and members of the Council for 1939:—Vice-Presidents, Dr. W. L. Crowther (1 year), Mr. W. H. Clemes (2 years); Treasurer, Mr. S. Angel. Council: 3 years, Dr. A. N. Lewis and Dr. V. V. Hickman; 2 years, Mr. E. E. Unwin and Mr. Henry Allport; 1 year, Dr. J. W. Evans and Mr. W. H. Hudspeth.

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

The following were elected members of the Society:—Dr. C. Craig, Dr. D. H. E. Lines, Mr. A. R. Bull, Mr. O. J. Sternberg, Alderman R. H. Lord.

Dr. F. W. Whitehouse gave an illustrated lecture on 'Experiences of a Geologist in the Field', of which the following is an abstract:—

> Dr. Whitehouse explained that a palaeontologist's work was, briefly, the collection and study of fossils. The earth had been in existence about 2,000,000,000 years, and they could trace life back only 600,000,000 years. Before that period it was difficult to correlate things from country to country. This matter, however, was made comparatively easy by the existence of fossils, and it was his job as a palaeontologist to interpret fossils in that way. Persons had been working on those lines for a long while, and had built up an amazing number of facts.
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> In his main work of correlating the strata from place to place, the palaeontologist unearthed many curious creatures in a fossil state, and had revealed a great wealth of pre-existing floras and faunas, thus adding greatly to the knowledge of evolution. He illustrated this by examples, particularly as they applied to Australia, and to Tasmania. Some of the Tasmanian examples had been found very difficult of correlation with other zones in the world.
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> Dr. Whitehouse told of his practical experiences in the far west of Queensland, and in the Northern Territory, where he had spent the Summer vacations for the past seven years, and prior to that in the artesian basin of Australia. It was necessary for a palaeontologist to do his own collecting, and there were only four or five to cover the immense area of Australia. He concluded his lecture with a number of lantern slides.

20TH MARCH, 1939

A meeting was held in the Society's Room on this date. Mr. W. H. Hudspeth presided in the absence of the President.

Mr. Hudspeth announced the death of the Hon. L. M. Shoobridge, who had been a member of the Council for some years and mentioned the loss which Mr. Shoobridge would be to the community at large. The Council of the Society had already sent a message of condolence to Mrs. Shoobridge.

The following were elected members of the Society:—Ordinary Members, Mr. J. O. Henrick; Associate Members, Mrs. J. A. McElroy, Mr. R. W. Kerr.

It was announced that the Clive Lord Memorial Prize to the value of £10 had been awarded to Mr. R. J. Linford for his essay on 'The Customs Tariff and Economic Expansion—A Survey of the Industrial Development of Tasmania during the years 1803 to 1850 and its relation to revenue collections', and that the award would be made at the next meeting of the Society.

Dr. A. N. Lewis gave an illustrated lecture on ' Time Scales in recent Tasmanian Geological History ', of which the following is an abstract:—

The advance in our knowledge of physiographical geology in the past 15 years has changed our ideas of Tasmanian geology.

At one time Tasmania was much more extensive than at present, was joined to the Mainland and consisted of flat or rolling plains like the Midlands to-day.

The first change was a considerable western uplift which spread along the northern coast to the north east giving a series of mountains at least 4000 feet higher than the original plain. Later these mountains were worn down so as to expose the ancient ore-bearing rocks.

This was followed by an ice age consisting of three phases. After the first glacial phase there was considerable volcanic activity giving large lava flows.

A second uplift caused the central, eastern and southern highlands. This uplift broke the old valleys frozen by the basalt lava flows and in places caused a difference in level of as much as 4000 feet in some valleys.

Next the Bass Strait was formed and considerable areas off the west, south and east coasts were submerged.

All these movements were the result of pressure caused by the sinking of the ocean floor and the consequential squeezing of the southern part of the Australian land mass. The mountains were compensational effects of that pressure. Thus the scenery and geographical features of Tasmania have been produced in relatively recent times. The movements were gradual and are probably still in progress.

## 17TH APRIL, 1939

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

Mr. Henry Allport was elected to the Council in place of the late Hon. L. M. Shoobridge.

The following were elected members of the Society:—Mr. L. Cerutty, Mr. G. C. Israel.

The Clive Lord Memorial Prize was presented to Mr. R. J. Linford.

Short illustrated notes on biological subjects were given as follows:—

Professor A. L. McAulay gave a paper on ' Saltants of a fungus produced by ultra-violet rays ', illustrated by lantern slides.

Dr. V. V. Hickman showed a specimen of the Pouched Lamprey, *Geotria australis* Gray, which occurs in Australia, New Zealand and South America.

A specimen from Tasmania was described under the name *Geotria allporti* by Gunther in 1871. F. G. Maskell (*Trans. Proc. N.Z. Inst.*, Vol. 60, 1929) has shown that, after hatching, *Geotria australis* passes through four well marked stages in its development, namely, the Ammocoetes stage, the Macrophthalmia stage, the Velasia stage and finally the adult or sexually mature stage. These developmental forms are so different that for a number of years they were regarded as distinct species. The large gular pouch is well developed only in the male, the female often showing no signs of a pouch. The Velasia stage is spent at sea and there is some evidence that, on returning, the lamprey enters Tasmanian rivers in May or June.

Dr. H. D. Gordon exhibited several specimens of the ' Native Bread '—*Polyporus mylittae*.

Dr. Gordon exhibited several specimens of the ' Native Bread '—*Polyporus mylittae*, including one which he had recently received from Dr. R. A. Scott of the Department of Agriculture, Launceston, and which showed an unusually prolific growth of the mushroom-like reproductive structures or sporophores. He explained that the so-called ' bread ' was a sclerotium, a dense mass of fungus tissue in which food material is stored, to be used up later as the sporophores develop. This habit could be compared with that of many flowering plants which store food in a bulb or tuber and use it up later in the rapid development of leaves and flowers.

Dr. Gordon also exhibited a specimen of a moth caterpillar parasitised by the fungus *Cordyceps*, and explained that in this case the fungus assimilated all the internal tissues of the caterpillar, which were replaced by dense fungus tissue, the outer layers alone persisting unchanged, thus a sclerotium was formed retaining the appearance of the caterpillar, and from this sclerotium the visible spore-bearing part of the fungus developed.

Mr. R. G. Brett discussed the identification of Eucalypts in the Field.

He pointed out that the difficulties in identification of Eucalypts in the field arise from a failure to recognize the nature of an average Eucalypt population. In general the following components are present:—

(*a*) Species exhibiting marked variability.
(*b*) Interspecific hybrids and their segregating progeny.
(*c*) Polymorphs.
(*d*) Inter-polymorph-specific hybrids and their progeny.

The term polymorph was defined as a member of a population derived from two or more species but showing strongly the character of one, e.g., x*E. risdelata* derived from *E. risdoni* Hook., f, and allied species by hybridization. Polymorph populations exhibit varying degrees of fixation and in some cases approach that of a true species.

The types were illustrated from Tasmanian and Extra-Tasmanian collections in the form of photographs and seedling trees.

The question of a suitable terminology was discussed.

A short account of the principal insects that attack oak trees in Tasmania was given by Mr. J. W. Evans. The black deposit found so commonly on these trees is a secondary effect resulting from the growth of a sooty-mould fungus on the excreta of the oak-scale and the oak aphis. In conclusion the lecturer stated that, as the result of the activity of insect parasites of the scale and the aphis, the health of oak trees was steadily improving.

Dr. Pearson laid on the table an Astraeid coral, specimens of which had been found washed up on the northern shores of Tasmania. A specimen had also been found at Dover. The evidence pointed to the fact that this coral was living in Tasmanian waters, in itself a remarkable thing as Astraeid corals had not hitherto been found so far away from the tropics, so far as Dr. Pearson was aware.

### 8TH MAY, 1939

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

Dr. Pearson brought to the notice of the Society the discovery in South African waters of a living Coelacanthid fish belonging to a group of Crossopterygian fishes which had hitherto been regarded as extinct.

The last recorded Coelacanthid fossil occurred in the Upper Cretaceous Age and so this discovery of a living member of the group was of the highest zoological interest and of supreme inportance. Dr. Pearson recalled the discovery of the Tasmanian crustacean *Anaspides* in 1893, which bridged an even greater gap, as the relatives of this form had been regarded as having died out as early as carboniferous times. It was perhaps understandable that a relatively small animal such as *Anaspides* should have escaped the notice of observers for nearly a century after Tasmania was colonized by civilized men but it was amazing that a large living Coelacanthid fish should have evaded discovery.

Dr. J. W. Evans gave an account of Aquatic Insects.

Before dealing with the different groups of aquatic insects, mention was made of the pioneer workers who had investigated the life-history of a number of water insects. These were Reamur, Swammerdam, Lyonnet and de Geer. Structural adaptations that enable insects to live in water were discussed, especially those concerned with breathing, and in relation to the surface film. Examples of the principal groups of water-living insects were dealt with, and attention drawn to the wide range of conditions afforded by an aquatic medium. The lecture was illustrated by drawings and photographs and several live water insects exhibited.

### 5TH JUNE, 1939

A meeting was held in the Society's Room. His Excellency the Governor presided.

The following members were elected:—Ordinary, Professor E. R. Walker, Mr. H. J. Read; Associate, Mr. S. C. Morris.

Mrs. J. A. McElroy gave a paper on Dr. Joseph Milligan and some early records of the Royal Society of Tasmania.

This paper gave a brief biographical sketch, and an account of Dr. Milligan's activities as Secretary of the Royal Society from 1848 to 1860. It described many objects donated to the Museum when it occupied the premises at the corner of Harrington and Macquarie Streets, and also the development and products of the Botanical Gardens.

Mr. W. E. Masters gave a lecture on 'Free Immigration in the 1820's'.

## 10TH JULY, 1939

A meeting was held in the Society's Room. In the absence of the President, Mr. W. H. Hudspeth presided.

The following members were elected:—Dr. A. B. Edwards, Mr. J. E. Cuthbertson.

Professor E. Ronald Walker gave a lecture on the economic background of the European situation. The lecture was illustrated by maps.

He pointed out that in studying the present situation in Europe we must recognise that leaders and parties can determine the course of events, only within certain limits imposed by economic conditions.

Behind the spectacular moves of politics certain fundamental economic pressures are operating which may prove to be more important in the long run than strokes of policy. For instance the population balance of Europe is changing. Of the expected increase of 100 million between 1930 and 1960, no less than 75 million will be in Eastern Europe and 15 million in Mediterranean countries. Central Europe will expand very slowly, while the populations of the West and North will stagnate. This shift in population complicates the relationships between rural and industrial Europe. In Eastern Europe there is chronic over-population of the rural areas, which used to be relieved by overseas emigration, but now can only be absorbed and supported by the industrialization of backward regions of Europe. The poverty of these Eastern countries prevents accumulation of the capital which is necessary for their industrialization. Consequently the future depends upon co-operation with the Western industrial powers which have capital available for investment. One obstacle to this co-operation is the desire of the industrial interests to preserve Eastern Europe as a market for Western manufactures and as a source of raw materials for Western industry.

Europe's problems cannot be solved by the piecemeal efforts of separate States, each insisting on its own sovereignty. Planning on a continental scale is needed. But European sentiment lags behind the facts of European economic unity. The Western democracies, Britain and France, have one foot in Europe and the other overseas; and Germany is obsessed by the delusion of racial supremacy. The other European powers are too small or too weak to play a dominant role in the reorganisation of Europe's economic life which is a necessary condition for the survival of European civilization.

Germany's leaders are bent on solving the European problem by dominating Central and Eastern Europe. Economically this implies the exploitation of the outlying states rather than their industrialization and does not promise a solution of their agrarian problems.

Both Germany and Italy back their diplomacy with the threat of a 'lightning war', but a war of attrition is more likely. In such a war the balance of economic strength would not be in Germany's favour.

## 14TH AUGUST, 1939

A meeting was held in the Society's Room. In the absence of the President Mr. W. H. Hudspeth presided.

The following members were elected:—Mr. A. F. Ryan, Mr. G. K. Meldrum, Mr. W. S. Manson, Mr. G. H. Crawford, Mr. J. A. Dumaresq, Dr. B. A. Anderson, Mr. R. G. Hall, Miss G. M. F. Brown.

Dr F. P. Bowden gave a lecture on 'Polishing and the sliding of Ski' of which the following is an abstract:—

1. *The Mechanism of Polishing*

The process of polishing is greatly influenced by the relative melting point of the polisher and the solid. The relative hardness is comparatively unimportant. Experiment shows that surface flow is brought about by an intense local heating of the surface irregularities to the

melting or softening point. The molten or softened solid flows or is smeared over the surface and very quickly solidifies to form the polished Beilby layer. These local high temperatures also play an important part in the wear and corrosion of sliding surfaces.

2. *The Sliding of Ski*

An experimental investigation is made of the experimental laws which govern the friction of solids sliding on ice and snow. The static friction is considerably higher than the kinetic friction. Within certain limits, the coefficient of kinetic friction is independent of the load, apparent area of contact and the speed of sliding. The kinetic friction on ice, at temperatures near the melting point, is very small but it increases as the temperature falls and at low temperatures reaches a value comparable with that observed on other crystalline solids. The friction is greatly influenced by the thermal conductivity of the sliding surface.

There is evidence that the low friction is due to the local formation of a thin water film at the points of sliding contact. The results suggest that, although pressure melting may play some part, the low friction observed for rapidly moving solids is due largely to melting by frictional heat.

Experiments with miniature and real ski on snow show that the same general laws are obeyed as on ice. The higher friction on snow is attributed to the extra work of displacing and compressing the snow crystals.

## 11TH SEPTEMBER, 1939

A meeting was held in the Society's Room. In the absence of the President Dr. W. L. Crowther presided.

The following members were elected:—Mr. A. Flach, Dr. W. P. Holman.

The subject of 'Inheritance of Visual Defects' was dealt with by Dr. J. Bruce Hamilton and Dr. J. Pearson.

Dr. Pearson explained the principles of genetics and the mechanism of heredity. The genes which are the unit factors of inheritance are discrete particles situated within the chromosomes. Each characteristic of an organism owes its presence to a particular gene or group of genes and it is not the characteristic which is inherited but the gene which produces the characteristic. Under normal conditions genes are handed on from parent to child unchanged.

Genes exist in homologous pairs or allelomorphs dealing with alternating or opposing characteristics. If each parent hands on to the child the same member of the allelomorphic pair the child will have a double dose (homozygous) of that particular gene. If, however, each parent hands on opposing allelomorphic genes the child will carry two unlike though homologous genes (heterozygous). The presence of one of these (the recessive gene) will be masked by the dominant gene and the child will bear outwardly the characteristic caused by the dominant gene only. In the case of human eye diseases, most of which are caused by recessive genes, if such recessive genes occur side by side with the dominant gene, the person will not be liable to the disease. If, however, each parent hands on to the child the recessive gene, the offspring will have a double dose of the recessive gene and will have the disease. Consanguineous marriages are not harmful in themselves but only because they make it possible for a double dose of disease-carrying recessive genes to be brought together in the children.

Dr. Pearson went on to show how the genes retain their individuality through succeeding generations and demonstrated the effects of different combinations of genes.

He then dealt with sex-linked inheritance. Many important eye diseases are sex-linked.

Dr. Hamilton followed and pointed out that hereditary defects of the eye fall into two categories, those causing blindness, and those causing sub-normal vision. One hundred and sixty pedigrees of inherited eye disease in Tasmania have been worked out by Hamilton, and these account for 19 of the known 46 inherited eye diseases. According to the researches of Counsell and Hamilton, 40 per cent of the blindness in Tasmania is due to inherited defects, namely, cataracts, Leber's optic atrophy, retinitis pigmentosa, detachment of the retina, glaucoma, and nystagmus. Those producing defective eyesight, without blindness are: microphthalmos, heratoconus, strabismus, senile macula degeneration, myopia, and astigmatism, so it is obvious that unless the problem of eugenics is faced by the Government, and the people of Tasmania, the cause of inherited eye defects and of blindness will be steadily maintained in this island. In the course of his lecture Dr. Hamilton illustrated his point by showing pedigrees of families carrying hereditary eye defects. These pedigrees were afterwards discussed by Dr. Pearson who explained their genetic significance. In conclusion Dr. Hamilton stated that a Sight Saving School had been opened in Hobart to deal with the education of children with defective sight, but the problem must sooner or later be attacked at its origin. A voluntary pre-marital advice clinic is urgently needed and voluntary sterilisation with safeguards should be made legal.

23RD OCTOBER, 1939

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

The second Clive Lord Memorial Lecture was delivered by Professor J. B. Cleland, M.D., of the University of Adelaide. Before the lecture His Excellency the Governor presented the Clive Lord Memorial Medal to Professor Cleland.

Professor Cleland gave a lecture entitled 'Some Aspects of the Ecology of the Aboriginal Inhabitants of Tasmania and Southern Australia'. (See this volume, p. 1.)

26TH OCTOBER, 1939

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

Professor J. B. Cleland gave a lecture entitled 'Anthropological Expeditions in Central Australia' which was illustrated by cinema films.

13TH NOVEMBER, 1939

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

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

T. Kobayashi: 'Lower Ordovician Fossils from Junee' (printed in full in the present volume, p. 61).

T. Kobayashi: 'Lower Ordovician Fossils from Caroline Creek' (printed in full in the present volume, p. 67).

A. N. Lewis: 'Geology of the Tyenna Valley' (printed in full in the present volume, p. 33).

A. N. Lewis: 'Record of Glossopteris from Cygnet' (printed in full in the present volume, p. 95).

J. Pearson: 'Notes on the Blood system of the Marsupialia' (printed in full in the present volume, p. 77).

V. V. Hickman: 'The Toxopidae, a new Family of Spiders' (printed in full in the present volume, p. 125).

N. J. B. Plomley: 'The Genus Heterodoxus' (printed in full in the present volume, p. 19).

G. B. Thompson: 'Distribution of Heterodoxus' (printed in full in the present volume, p. 27).

Mr. D. Martin gave an illustrated lecture on 'The Vegetation of Mount Wellington, Tasmania' (printed in full in the present volume, p. 97).

Mr. E. T. Emmett gave a short note on 'Tasmania's Oldest Road'.

Apart from tracks and rough minor roads Mr. Emmett claimed that the Hobart-New Norfolk road, which was completed in 1819, was the first road of importance to be constructed in Tasmania. It is interesting to recall that the real genesis of the road was bushranging. On 23rd October, 1814, a gang of robbers visited the home of Dennis McCarty at New Norfolk and made off with all the valuables they could carry. To recoup him his loss McCarty asked Governor Sorell, four years later, to give him a contract to build a good carriage road 16 feet wide from Hobart to New Norfolk, on consideration of being given:—2000 acres of land; 15 men on the store for 12 months at 1½ rations each; 8 bullocks and a cart; 500 gallons of rum, duty free; a tent for the men to sleep in and tools fit for the purpose. As there was some dispute as to whether the road should be from New Norfolk to New Town or New Norfolk to Hobart McCarty was recommended to undertake the whole road and leave the final terms to the judgment of the Governor in Chief.

In a letter dated 26th June, 1819, McCarty reported to Governor Sorell that the road was completed. A survey committee was appointed to inspect the road. They reported that the work had been done badly and that it would take 16 men four months to render the road passable. Governor Collins notified McCarty that the Government would complete the road, which would become a charge against his compensation.

It would appear that no final settlement of McCarty's compensation was made but McCarty received 500 acres of land at New Norfolk and 1000 acres at Dromedary. McCarty died early in 1820.

Mr. W. F. D. Butler exhibited a gold coin which recently came into his possession. This was a five Rupee gold coin of the East India Company, which was minted between the years 1822 and 1832.

Besides the English inscription 'English East India Company' it bears an inscription in Persian which interpreted reads 'Five Rupees of the Honourable East India Company'.

In 1803 Spanish dollars were stamped and circulated in Great Britain owing to the scarcity of local currency, and later on a shipment of Spanish dollars were obtained from Bengal and were made legal tender in this Colony. The Governor converted them into the well-known Holey dollar and Dump. Such coins passed currency in the Colony for a considerable time and helped the deficiency in currency. Many local merchants issued also their own tokens, mostly copper.

A committee of the Legislative Council was appointed to inquire into and report upon the expediency of introducing the Sicca rupee and the dollar of the United States into legal circulation of Van Diemen's Land, and such committee made a report on June 17th, 1835, which recommended that the Sicca rupee be made legal tender in Van Diemen's Land but not the dollar of the United States.

In consequence the Act 6 William IV No. 5, passed by the Legislative Council on the 2nd September, 1835, recites that 'there is at present a deficiency in the quantity of British silver money in actual circulation within this Colony, and it would therefore and for other reasons be of advantage to commerce to encourage the circulation of the rupee at or about its intrinsic value which as near as can be ascertained is 2s. or rather more'. It was therefore enacted 'that the Calcutta or Sicca rupee shall be a legal tender and be payable and received and taken in payment at or for the same sum or amount of 2s. and the said coin shall be payable and received accordingly at that rate in discharge and payment of all debts and sums whatsoever'.

Mr. Butler pointed out that this Act does not define the particular coin which was to be so taken but the wording apparently related to the silver Calcutta rupee of the East India Company. A gold coin of the value of five silver rupees would almost certainly be equally acceptable in the Colony and would easily circulate, and this coin can therefore be classed as one of the coins circulating in the Colony in or after the year 1835.

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# Northern Branch

## Annual Report, 1939

All meetings of the 1939 Session, other than the Annual Meeting and Public Lecture, were held in the lecture room at the Queen Victoria Museum and Art Gallery. The schedule of ordinary meetings of previous years was extended, an extra meeting being held in October.

### 22ND MAY, 1939

*Annual Report and Public Lecture*

The Annual Meeting for 1939 was held in the classroom, Public Library, on this date, at 7.30 p.m.

The Hon. Tasman Shields presided. The following were elected officers for 1939:—

President: Mr. F. Smithies.

Council: Mr. F. Smithies (Chairman), Mr. F. Heyward, Hon. Tasman Shields, Mr. W. R. Rolph, Mr. R. S. Padman, Mr. J. R. Forward, Mr. D. V. Allen, Mr. J. E. Heritage, Dr. R. A. Scott

Hon Secretary: E. O. G. Scott.

Hon. Auditor: R. S. Padman.

The statement of accounts, which showed a credit balance of £24 1s. 9d., was read and adopted.

The Annual Meeting was followed, at 8 p.m., by a public lecture, 'Colour Photography in Tasmania' by Mr. H. J. King. The lecture was given in the Main Hall, Public Library, the accommodation of which was taxed by an audience estimated to number 350. An abstract of the lecture is subjoined.

Mr. King gave a short introductory talk on colour photography, in the course of which he discussed the several methods adopted in attacking the problem, and reviewed recent developments that have made the taking of satisfactory pictures in colour a successful commercial proposition.

The speaker then presented a remarkably fine series of coloured moving-pictures prepared by himself. Subjects dealt with covered a wide field, including pictorial characteristics of the seasons; Tasmanian scenery, particularly in the Cradle Mountain Reserve; life on the seashore; trout fishing in Tasmania, and the history of the trout from the stripping of the ova, through the development of the young, to the catching of the adult fish; common insects, with special emphasis on methods of locomotion and feeding; the unfolding and withering of the One-Day Lily; cultivated flowers; wildflowers, etc.

### 26TH JUNE, 1939

The President, Mr. F. Smithies, presided.

The following new members were proposed:—Miss Browne, Mr. J. Dumaresq, Mr. G. Crawford, Mr. R. Hall, Mr. W. Manson.

Dr. W. P. Holman gave an illustrated lecture, ' A Short History of the Application of Rays in Medicine ', of which the following is an abstract.

Dr. Holman introduced his subject by a chronological outline of the early history of irradiation in its clinical application, illustrating his observations with some interesting pictures of pioneer methods of treatment of patients. The story was then traced through the successive stages of evolution to medium therapy, and to the modern practice of deep therapy. Present-day technique and installation were considered in some detail.

The speaker emphasised the importance in the rapid development of X-ray therapy of the co-operation of workers in various fields of science. The parts played by the physicist, the electrical engineer, and the biologist were described and assessed; and a broad sketch given of the general superstructure erected by the medical radiologist. Dr. Holman illustrated his subject with numerous diagrams and lantern slides.

The lecture was followed by a discussion. Those participating included Mr. Smithies, Mr. Lovett, Mr. Phillips, Mr. Dumaresq, and the Secretary.

The Secretary exhibited the stomach-contents of a Seven-Gilled Shark caught recently at Bell Bay, River Tamar. The material included the remains of a fair-sized bird, vertebrae of several sharks, and jaws and other bones of two or three quite large fish.

### 17TH JULY, 1939

The President, Mr. F. Smithies, presided.

The following new members were proposed:—Dr. W. P. Holman, Mr. J. V. Tanner.

Mr. J. A. Ingles gave a lecture, ' Lightning and Other Natural Phenomena ', of which the following is an abstract.

Mr. Ingles dealt particularly with investigations he had carried out while engaged on the construction of a transmission line in Canada. Lightning, he pointed out, was a problem of distinct interest to an electricial engineer, owing to the readiness with which it could cause serious damage to transmission lines, with consequent interruption to the power supply. On his arrival in Canada, he continued work on a series of experiments begun in France, which seemed to indicate that lightning occurred with greater frequency when there was an excess of negative ions in the air. The economic implications of the liability of electrical supply and the distribution systems to damage from lightning were explored in some detail.

In treating of the other natural phenomena noted in the title of his address, Mr. Ingles presented some very interesting facts regarding the setting up of vibratory movements in transmission lines by winds of quite moderate velocity.

A full and interesting discussion, in which a number of members participated, followed the address.

### 21ST AUGUST, 1939

Mr. A. L. Meston gave a lecture, ' Ruined Cities of Southern Rhodesia ', of which the following is an abstract.

Mr. Meston gave a general account of some of the remarkable ruins of Southern Rhodesia, which he had the opportunity of inspecting during his recent trip overseas. Special attention was paid to the ruins at Inangya, Zimbabwe, and Mapungubwe.

The speaker pointed out that unfortunately many of the ruins had been rifled, and, in some instances, partly destroyed long ago, with the result that much valuable data that might have thrown further light on the problems presented by these curious relics of bygone civilisation had become irretrievably lost. With the aid of diagrams and scale-plans the general topography of the regions under discussion was examined, and the peculiar geographical features of the sites selected by the builders were made clear. Various theories of the origin of the ruined cities were reviewed, and Mr. Meston suggested the available evidence pointed to the earliest of the structures having been erected about 900 A.D. by the ancestors of the existing Bantu race.

The lecture provoked a full and interesting discussion in which Messrs. Allen, Phillips, Evershed, Smithies, Skemp, and Scott participated.

### 18TH SEPTEMBER, 1939

The President, Mr. F. Smithies, presided.

Mr. P. H. Bond delivered a lecture, ' Science and the Farmer,' of which the following is an abstract.

Mr. Bond began his address with a survey of farming methods and conditions, at home and abroad, at the beginning of the 19th Century. Dealing particularly with Australian conditions, he showed how a natural course of development, with increase in population, gradually led to the exploitation of small holdings, thus creating urgent problems regarding adequate production, and, in the case of stock, disabilities arising from congestion. The speaker proceeded to trace the measures evolved by the farmer and the agricultural expert in collaboration to meet the demands of the new conditions.

In illustration of this aspect of his subject, Mr. Bond cited, and discussed, a number of examples of successful research work, directed towards control of pests, increase of soil-fertility, production of disease-resisting strains of wheat, and general improvements in stock-raising and wheat-growing.

It was pointed out that nowadays a farmer must have, in addition to his agricultural knowledge, at least a passing acquaintance with the skilled trades, some idea of engineering principles, and a smattering of the major sciences. The speaker deplored the tendency of the present educational system to urbanise the country boy, who, after all, was the person most likely to be successful on the land.

The lecture was followed by a discussion, in which Messrs. Evershed, Smithies, Allen, and Dumaresq participated.

### 16TH OCTOBER, 1939

In the absence of the President, Mr. W. R. Rolph presided.

Mr. E. O. G. Scott gave an address, ' Modern Museum Developments ', of which the following is an abstract.

Mr. Scott pointed out that the old conception of a Museum as a building in which miscellaneous specimens and curiosities were preserved in cases, and to which the public were at certain times given access was now being rapidly superseded by a more liberal and enlightened view of its functions and potentialities. The modern Museum does not content itself with a merely passive attitude, but adopts a positive policy calculated effectively to discharge a three-fold function—namely the conservation, the increase, and the diffusion of knowledge. In a general Museum these three functions should be approximately co-ordinate.

The evolution of the new conception of the Museum was traced with the aid of a series of symbolic diagrams. In concluding his remarks, the speaker touched upon some of the outstanding developments observed in Museums studied during his trip abroad last year.

At the conclusion of the talk, a selection of Museum literature was handed around, and formed the basis of an interesting discussion.

### COUNCIL MEETINGS

Council Meetings were held on 26th April, 4th June, 3rd July, 8th August, 9th October, 13th November.

H. H. Pimblett, Government Printer, Tasmania.