

Abstract of Proceedings

8TH FEBRUARY, 1940

A meeting was held in the Society's Room on this date. The President, His Excellency the Governor, Sir Ernest Clark, K.C.B., K.C.M.G., C.B.E., presided.

Professor A. E. V. Richardson, C.M.G., M.A., D.Sc., Deputy Chief Executive Officer of the Commonwealth Council for Scientific and Industrial Research, gave a lecture on 'Scientific Research in Relation to Industry'.

Professor Richardson said that the demand for assistance for scientific research in agricultural problems was so great that the Council for Scientific and Industrial Research had now about 600 workers engaged in research on primary problems. He emphasized that the central aim of the national policy should be the development of primary industries to the highest attainable level and the organisation of the rural population as an important part of the political and social fabric of the nation. He went on to show that the investment which Australia had made in research had paid magnificent dividends and the improvement in production had benefited farmers, consumers, and society as a whole. So far as the future was concerned there were immense developments still to take place in Australia's primary industries.

Professor Richardson went on to show that, although primary production in Australia had expanded enormously during the past generation, there was an actual reduction in numbers now engaged in agricultural pursuits. For example, in 1913 there were 211,000 male persons engaged in agriculture, and, despite the tremendous developments since that date, the present number was only 189,000. That was mainly due to the mechanization of production. It was not in agriculture, therefore, that Australia could hope to absorb large numbers of new settlers. Migration must be definitely linked with industrialization. What was needed was a well-balanced economy which would envisage the full development of the mineral, power, forestry, fishery, and agricultural resources of the Commonwealth and the establishment of such manufacturing industries as are dependent upon them.

11TH MARCH, 1940

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

The following were elected Office-bearers and members of the Council for 1940:—Mr. E. E. Unwin was elected Vice-President in the place of Dr. W. L. Crowther, who retired under Rule 12; Dr. W. L. Crowther and Mr. A. L. Meston were elected in the places of Mr. W. H. Hudspeth and Dr. J. W. Evans, who retired under Rule 21; Mr. N. P. Booth was elected to the Council for the unexpired portion of Mr. Unwin's period, namely one year: Treasurer, Mr. S. Angel.

Mr. Walter Taylor was appointed Hon. Auditor.

It was agreed, on the recommendation of the Council, to make the following change in the hours of opening the Society's Library:—

That members should make use of the Library for reading purposes only when the Assistant Librarian is present at the following times:—Monday, 10 a.m.—1 p.m.; Wednesdays and Fridays, 10 a.m.—1 p.m., 2—5 p.m.; 7.30—8 p.m. on evenings when a General Meeting is held.

It was also suggested that, if members wished to use the Library on Saturday mornings, this might be arranged instead of a half day during the week.

Mr. H. O'May gave an illustrated lecture on 'The Ship Building and Sea Faring Pioneers of Tasmania' of which the following is an abstract:—

These pioneers played a very important part in the development of the Island State, but, as Tasmania was a penal settlement, the free colonists were not allowed to build or own vessels, and, as the vast landlocked waters at the estuary of the Derwent abounded with the black whale in the breeding season, those early settlers were forced to stand by and witness thousands of pounds worth of whale oil taken by Port Jackson and English whale ships, and they were not allowed to participate. This of course caused much discontent, and it was some years before these restrictions were removed.

Then convenient places were chosen around the foreshores, suitable bluegum trees selected, saw-pits dug, and keels, frames, planking, and fastenings of tree-nails prepared.

This Tasmanian timber proved to be second to none for shipbuilding purposes, trees could be found up to 150 feet, straight up to the first limb, this was a great advantage, as it allowed the keels, keelsons, and stringers, &c., to be cut in one length, and the breaking strain of this splendid timber was above that of English oak or teak.

The first square-rigged vessel known to be built on the shores of the Derwent was the *Campbell Macquarie*, a brig of 133 tons. She was built by Samuel Gunn for R. W. Loan, a merchant of the city, and was launched in Sullivan's Cove in 1813.

Vessels were built at New Town Bay, Rosny Point (then known as Canadian Point), Brown's River, Pittwater, Port Davey, Macquarie Harbour, Port Arthur, Bruny Island, and the Huon River, some for the flourishing whaling trade (the price for whale oil then ranged from £25 to £120 per ton), and others were engaged in inter-colonial, and quite a number for the Home, trade. These little Tasmanian built vessels poked their long flying jib-booms into many ports of the world, and wherever they went they were admired, by men who understood the sea and ships, for their staunchness of construction, their model, and rig.

Amongst the builders were David Hoy, Thomas Florence, W. Maycock, Johnson, Peter De Graves, Williamson, Gray, Callaghan, C. Chessell, John Ross (who laid down the first patent slip in 1854). Perhaps the best-known was John Watson, who launched many fine vessels, amongst them the historical whaler *Flying Childers*, and he also taught many young Tasmanians the art of ship-building. Such past-masters as John, Alexander, and James McGregor, John Lucas, James Mackey. All these yards turned out some splendid vessels, such as the *Harriet McGregor*, *Loongana*, *Waratah*, *Oceana*, *Nautilus*, all noted for their models and speed. The largest vessel, *Tasman* (560 tons), was launched by Peter De Graves in March, 1847. Johnson, from his yard at Kangaroo Point in 1838, launched the barque *Sir George Arthur*, a vessel of about 400 tons, build for Petchey, and it was the first Tasmanian-built vessel to enter the London trade.

Callaghan built the first steamer in Tasmania. He set afloat the *Governor Arthur* from his yard in Sullivan's Cove in 1832. This little vessel was built for the Kangaroo Point ferry service.

Charles Chessell was responsible for the first ship-rigged vessel when he launched the *Maria Orr* for William Morgan Orr. This ship was built on the spot where the Shell Oil Tank now stands.

Williamson built many fine vessels. Amongst them were the *Harriet Nation* and *Margaret Brock*. John Ross, from his yard at Secheron Point, launched the *Thomas Brown* and *Isabella Brown*.

The last barque-rigged vessel built was the beautiful little *Loongana*, set afloat by John McGregor from his yard on the foreshore of the Domain in 1878.

The number of vessels built at Hobart from 1825 to 1872 was 313, with a tonnage of 19,959.

In 1919 Purdon and Featherstone launched from their yard at Battery Point the *Valmarie*, a fore and aft three-masted schooner of 256 tons.

H. McKay built, on the shore of the Channel, the three-masted fore and aft schooner *Kermandie*, 342 tons; and F. and H. Moore built and launched from Battery Point the three-masted topsail schooner *Amelia J*, 352 tons, for H. Jones and Co. This splendid little blue-gum clipper was lost with all hands on a voyage from Newcastle to Hobart in 1920.

Tasmanian seafarers were also known for their seamanship. This can be easily understood, for the island depended on them for its existence, and those little vessels kept the trade alive and the wheels of industry turning; and what a training ground for the young native-born on the broad almost tideless reaches of the Derwent. With the splendid wide stretches of land-locked waters at its estuary they could not be otherwise than expert seamen.

8TH APRIL, 1940

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

The following were elected members of the Society:—Ordinary Members, Miss W. M. Curtis, Mr. John Dow, Mr. A. M. Olsen; Associate Members, Mr. H. A. Winter, Mr. P. J. Bowling.

Dr. W. L. Crowther raised the question of the condition of the grave head-stones in St. David's Park, and the following motion was moved by him and seconded by Miss C. Travers, and the resolution was carried: *That members of the Royal Society recommend that action be taken by the City Council to safeguard the condition of the head-stones in St. David's Park, to have the lettering on the stones improved, and to make the head-stones more accessible for inspection by the public.*

Dr. H. D. Gordon gave an illustrated lecture on 'The Vegetation of the Beach', of which the following is an abstract:—

Sand is constantly being deposited on the beach by the sea, and as the surface dries at low tide it is blown inwards; plants and other obstacles cause it to heap up, forming sand-dunes.

Plants which grow in mobile sand must possess wide-spreading roots and runners capable of holding the sand, and must also have a vigorous upward growth to cope with the sand which is constantly being blown on top of them. In this way they build up higher and higher sand-dunes. The most efficient dune-former and sand-binder is the introduced Marram grass, but a number of native plants, such as the coast fescue, spreading sedge, and shore wattle are also effective sand-binders. Numerous other plants can establish themselves when these pioneers have brought some stability to the sand.

Often high winds will undo the work of the sand-binders and cause disintegration of the dunes, and persistent on-shore winds may keep the sand moving inland so as to cover adjacent land.

On sheltered beaches there is often a level strip of sand above high-water mark but in front of the dunes, which is inhabited by a distinct colony of strand plants, such as the sea rocket and glistening saltbush. These small plants form miniature dunes by accumulating small quantities of blown sand, but are incapable of surviving on the exposed beaches where movements and accumulation of sand are rapid.

Miss W. M. Curtis gave a paper on '*Spartina Townsendii*, its History and Economic Value in Reclaiming Tidal Mud', of which the following is an abstract:—

Spartina Townsendii, a grass inhabiting tidal mud, was first recorded in 1870 from the salt marshes of the South of England; ten years later it was recognized by H. and J. Groves as a distinct species. Although the plant bred true from seed, it was suggested that it might be a hybrid between *Spartina stricta*, which is indigenous to Europe, and *Spartina alterniflora*, introduced from America at the beginning of the nineteenth century.

An investigation of the floral morphology gave no clue to the origin of the plant, but the hybrid hypotheses was confirmed in 1930 by the cytological work of Huskins. He found the somatic chromosome numbers of the European representatives of the genus *Spartina* to be:—*S. stricta*, $2n = 56$; *S. alterniflora*, $2n = 70$; *S. Townsendii*, $2n = 126$. Huskins therefore found *S. Townsendii* to be 'an allopolyploid derived from the doubling of the chromosome number in the original hybrid plant.'

The new species has proved a rapid and effective colonizer of tidal mud, and has spread naturally to cover scores of square miles of country throughout the salt marshes of the south of England and the north of France. It has been planted on a large scale in Holland, where the resultant stabilization of the mud and rapid rise in level of the marsh have led to a very considerable acceleration in the operations of poldering and complete reclamation of land. *S. Townsendii* has recently been introduced to Australia, where small-scale experiments are in progress in various localities.

13TH MAY, 1940

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

Mr. B. W. Rait read a paper entitled 'A Century-Old Dictator', dealing with the life of Jorgen Jorgenson.

Born in Copenhagen in 1780, Jorgenson served as an apprentice in an English collier at the age of 14. After four years he transferred to a whaler, and made his way to Cape Town, where he joined the *Harbinger*, in which vessel he came to Australia in the year 1800. On the way out, King Island was discovered and named. In New South Wales, Jorgenson joined the brig *Lady Nelson* as second mate, and witnessed first the foundation of the first settlement on Van Diemen's Land at Risdon in September, 1803, and later the vain effort to establish a settlement at Port Phillip by Lieutenant-Colonel David Collins in October, 1803. He was on board the *Lady Nelson* during the exploration of the River Tamar in January, 1804, and in February took part in the foundation of Hobart. He left the *Lady Nelson* to join the whaler *Alexander* as chief officer, and claimed that, on a visit to the Derwent in this ship, he killed the first whale in the river. Returning to England in 1806 he crossed to Copenhagen, where he obtained command of a privateer *Admiral Juul*, in which he attacked the H.M.S. *Sappho*, and was compelled to strike his colours. He was taken to Yarmouth as a prisoner of war, and it was whilst on parole that he embarked upon an expedition to Iceland. This was in December, 1808, and on the second visit in June, 1809, he organized the dramatic coup that made him the self-styled 'Lord Protector of Iceland.' Ultimately, he was deposed, and, after many misfortunes, broke the law, and was transported to Tasmania for life, where he died in 1841.

Mr. E. T. Emmett also delivered an illustrated lecture on 'Early Days of New Norfolk', of which the following is an abstract:—

Sir John Hayes visited what is now the settlement of Hayes in 1793, and named the Derwent, Cornelian Bay, Mt. Direction, and Risdon. The Rev. Robert Knopwood also visited the district in 1804, and in 1807 Lieut. Laycock, on his way from Launceston to Hobart, stopped there. Governor Macquarie named the settlement Elizabeth Town in 1811, but the real genesis of the settlement might be said to be in the deportation of Norfolk Islanders to Australia in 1803. Elizabeth Town did not progress, and the district called New Norfolk, after the Norfolk Islanders, became the town. Mr. Emmett traced the history of the churches at New Norfolk and of various other places of interest connected with the growth of the settlement.

10TH JUNE, 1940

A meeting was held in the Society's Room on this date. In the absence of the President, Mr. E. E. Unwin, Vice-President, presided.

Miss J. W. Richardson was elected an Associate Member.

Mr. Clemes proposed, and Dr. Pearson seconded, that Dr. W. L. Crowther and Dr. V. V. Hickman be awarded the Royal Society of Tasmania Medal. This was carried unanimously.

Mr. E. O. G. Scott gave an illustrated lecture on 'Fish and Fish-like Animals', of which the following is an abstract:—

An introductory section dealt with some of the principal lines of contemporary research on fishes, and included reminiscences of prominent ichthyologists in various parts of the world.

The main groups of fish-like animals were enumerated: their affinities were discussed, and reasons for excluding them from the Class Pisces briefly noted.

Short accounts, illustrated by lantern slides, were given of recent researches in such fields as fish locomotion (Gregory, Breder, Green, Harris); mass-psychology (Schuett; Breder, and Nigrelli); Escobar, Minahan, and Shaw); round-about path of the Fighting Fish, *Betta splendens* Regan (Beniuc); antagonism and toxicity (Ellis, James); statistical researches on North Sea fisheries (D'Arcy W. Thompson, Graham); food of *Salmonidae* (Neill); influence of pH on rate of growth (Southern); life-histories of Australian pelagic fishes (Dakin, Colefax); matroclinous inheritance in *Mollienisia* (Hubbs); etc.

8TH JULY, 1940

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

The Royal Society of Tasmania Medal was presented by His Excellency to Dr. W. L. Crowther and Dr. V. V. Hickman, and they replied.

Miss C. H. Wedgwood delivered an illustrated lecture on 'The Economic Life of a New Guinea People', of which the following is an abstract:—

The lecture dealt with the Island of Manam, which lies about ten miles to the east of the coast of New Guinea in Lat. 4° 30' S. The islanders live in thirteen villages along the foreshore. These are composed of a number of separate homesteads occupied by members of a single family, those of the same clan forming usually a small hamlet. Each village has its own chief (*tanevwa*), who formerly had considerable authority and still plays an important part in the social and economic life. He is always the senior male member of the clan of the original founder of the village; the other clans also have their headman, who are leaders in all clan undertakings. Inter-marriage between the villages is usual, but each village is composed of different clans and is an independent entity.

There are certain misconceptions about the economic life of primitive peoples: that the women are drudges and the men drones; that natives are by nature lazy and only work for material necessities; that there is no specialization, and hence no organization, of labour; everyone working for his own individual family; that private ownership of land and goods is unknown, a kind of communism being the custom. To show how completely these are misconceptions three types of economic activity were described: gardening, house-building and canoe-building, and overseas trade.

Each village has its own tract of bush land, which is subdivided between the clans and of which the individual men and women have rights in garden ground. Ground is cultivated for two years and then left fallow for six or seven years. The clearing is done by a man with the help of his kinsmen, and they help the women with the planting. A woman with her younger children does the day-to-day weeding in her own or her husband's garden, but he often goes with her to help. There is no true harvest since the crops cannot be stored, but are dug as they are needed. Once a year, however, a village invites a neighbouring village to a festival at which the visitors dance and hosts make large gifts of food: this is reciprocated a few days later. The exchange has no significance as trade, but is of very great social importance. Generosity with food is expected of all people: all important social occasions (births, marriages, funerals, puberty ceremonies) are marked by feasts or a distribution of food. The crops which a man and his wife grow are never consumed only by themselves and their children; they are caught up in an intricate net-work of social obligations.

There are two types of house; one built on the ground and used by a man; the other raised off the ground on piles which is the woman's domain. The latter is the more important. In building such a house a man is helped by his male kinsfolk, while his wife and female kinsfolk prepare food for the workers. Kinsmen may also help by contributing wood for the building and coconut leaves for the thatch. The hearth, made up of layers of sand, fern and plaited coconut leaf, is always set in place by the woman who is to use it—the mistress of the house.

Manam is not self-contained, and it has always had to depend on the mainland. Every man and many women have in one or more mainland villages an hereditary "trade partner" (*tawa*). Only in this way was trade between normally hostile villages possible. Special, large, overseas canoes are built for the trading expeditions, and on their construction and beautification much labour is expended. Each clan has the right to build such a canoe, though the head man is spoken of as its owner, and it is he who organizes its construction and requites the workers with food and feasts. The most important canoe is that of the village chief. All the villagers, as well as his kinsmen in other villages, are expected to help build this. During the process of canoe-building, magic is made, not only to ensure that the vessel shall sail well, but also that it may attract to it the wealth of the mainland villages so that the trading expeditions may be prosperous.

European and native attitudes towards work and ownership of property are sufficiently different to lead to misunderstanding and conflict. To the native most work is a social activity and is creative with a definite emotional tone. The co-operative method of work and the custom of gift exchange serve to bind the community together, and have therefore much more than a merely economic significance. Reciprocity is the basis of all social relations.

12TH AUGUST, 1940

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

Miss J. Munro Ford was elected a member of the Society.

Mr. Leonard Cerutti delivered a lecture on 'Francis Bacon', of which the following is an abstract:—

Mr. Cerutti suggested that it might be profitable for members to study the works of Francis Bacon. There is a distrust of science exhibited in some quarters to-day, and free scientific thought is being attacked in the interests of state policies in Europe, so that contemplation of the doctrines of this man, who 'rang the bell which called the wits together', is salutary. 'His philosophical works have moved the intellects that have moved the world.'

The literary works of Francis Bacon display his unemotional mind, the poverty of his moral feelings, and his lack of warm human affection, but these defects scarcely detract from his contributions to scientific philosophy. He stood at the beginning of the modern scientific era, and in his two great works, *The Advancement of Learning* and the *Novum Organum*, he crystallized advanced thought of his time and established a basis for the work of the natural philosophers of the 17th century. He preached the doctrine of hard work in science; he insisted upon the danger of authority to scientific truth; and he emphasized the essential nobility of scientific investigation.

9TH SEPTEMBER, 1940

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

The following were elected members of the Society:—Professor J. B. Cleland, Mr. E. F. Fricke.

Mr. A. M. Olsen gave a paper entitled 'New Tasmanian Orchids'.

Mr. Olsen dealt with *Chiloglottis Pescottiana*, Rogers (Alpine Bird Orchid)—a slender glabrous plant about 8-18 cm. high. Leaves basal 2, oblong-lanceolate on long petioles. Flower solitary, greenish-bronze or wholly dark-prune. Lateral sepals linear-lanceolate, recurved, connate at base. Dorsal sepal spatulate-acuminate, about same length as lateral sepals. Petals lanceolate, wider than sepals but about same length. Labellum oblong, shorter than sepals, slightly recurved about the middle of lamina. Calli dark-purplish. One large crescentic sessile callus in middle line in advance of all others; a large bi-lobed stalked callus about midway between this and lamina base; and various small stalked calli around. Column winged above; another blunt; stigma circular.

This species is easily distinguished from all other known forms by the oblong canoe-shaped labellum.

It is known in Victoria only from Cravensville, Tallangatta Valley, N.E. Victoria, where it was discovered by Mr. A. B. Braine, the local school-master. It is fairly numerous in this locality. Found in Tasmania at Mt. Barrow, where also it is reported as abundant. The Collector is Mrs. Pearl Messmer, of Lindfield, Sydney, N.S.W.

Flowering period: September to November.

Mr. A. L. Meston gave an illustrated lecture on 'The Culture of the Tasmanians', of which the following is an abstract:—

The first group of slides dealt with the stone implements deliberately shaped for special service as tools. Many of these show skilful workmanship and reveal that the Tasmanians had made considerable advance in the technique of stone tool production. The lecturer attempted a classification of the implements, based on a very large number of specimens. The most abundant specialized form is the scraper with a snout, a tool which bears a marked resemblance to the *grattoir à museau* found in the upper levels of the Western European culture known as Aurignacian. Another abundant specialized implement is the point. Many of the specimens shown on the slides had delicate narrow secondary flaking, the work of skilled craftsmen. Concave scrapers, no doubt used as spoke shaves for smoothing the wooden spears and waddies, form another abundant group. Side scrapers, in which the cutting edge formed along the side of the flake is slightly convex, are well adapted as skinning tools. Other forms shown were high-backed or keeled scrapers, a highly specialized form of core scraper, and end scrapers. Several slides showed combination implements, and the characteristic oblique-angled striking platform of the Tasmanian lithic culture.

Besides these flake tools the lecturer showed the highly interesting and exceedingly primitive pebble choppers, known to science as the Sumatra type. Similar core implements may be collected in great numbers along the whole length of the east and south-east coast of Australia.

The third group of slides illustrated the bone implements used by the Tasmanians. These were of two distinct kinds, points and spatulas. Some have apparently been used as flaking tools, others for basket-weaving, though once again the use of these tools, unfortunately, is mainly conjectural.

An interesting slide was that depicting a basket made by Truganini, the last of the Tasmanians, for Miss Dandridge, and now in the lecturer's possession. Attention was drawn to the primitive basket weave.

Other slides dealt with the stone carvings of the Tasmanians at Devonport, Mt. Cameron West, and Trial Harbour; the small carefully shaped circular stone discs of unknown use, so frequent on West Coast middens; mill-stone, with well worked peripheral edges covered with red ochre pounded to form a raddle for the hair; hammer-stones of various shapes and sizes; and hut sites on the West Coast.

The lecturer also showed a unique skull drinking-cup, found on a midden close to a spring of sweet water at Port Sorell on the North West Coast. This is formed of a human skull top, which has been carefully cut into a drinking bowl, and has much similarity with the two skull ceremonial or drinking bowls from the Magdalenian layer in the great grotto of Placard in France.

7TH OCTOBER, 1940

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

Mr. Gregory Mathews, C.B.E., F.R.S.E., M.B.O.U., &c., author of the Monograph on the Birds of Australia, lectured before the Society and dealt with the preliminary work involved in obtaining material upon which his twelve volumes of the Birds of Australia were based. In the first place he organized observers and collectors throughout the Commonwealth, having at one time as many as twelve expeditions simultaneously in the field. Upwards of 120,000 birds' skins were obtained. These had to be carefully examined for purposes of identification, and all the information regarding them had to be tabulated. At the same time that this work was proceeding he began a quest for historical works bearing upon Australian birds, and as a result of this many works of great value were discovered. The lecturer went on to speak of bird migration. A great deal still remains to be done regarding Australian bird migration, and it was important that migration routes should be determined as soon as possible.

In his introductory remarks the President referred appreciatively to Mr. Mathews' generous action in presenting to the Commonwealth Government his entire library dealing with Australian birds.

11TH NOVEMBER, 1940

A meeting was held in the Society's Room on this date. Mr. E. E. Unwin presided in the absence of the President.

Mr. D. Daish was elected a member of the Society.

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

- (a) Consett Davis: 'Ecology of the S.W. Tasmania'.
- (b) J. W. Evans: 'The Morphology of *Tettigarcta tomentosa* White (*Homoptera, Cicadidae*)'.

- (c) R. F. Cane: 'Studies in Tasmanite Shale Oil'.
- (d) P. B. Nye: 'Tertiary Marine Rocks of Far N.W. Districts of Tasmania'.
- (e) F. M. Carpenter: 'A New Genus of Mecoptera from Tasmania'.
- (f) A. B. Edwards: 'On a Remnant of a Stripped Penepplain of Palaeozoic Age at Mt. Sedgwick in Western Tasmania'.
- (g) E. O. G. Scott: 'Observations on Fishes of the Family Galaxiidae. Part III.'.
- (h) W. H. Nicholls and A. M. Olsen: 'Additions and Corrections to the *Orchidaceae* of Tasmania'.
- (i) J. Pearson: 'The Heart and Great Vessels in the Marsupialia'.
- (j) J. Pearson: 'The Reproductive System in the Marsupialia'.

Mr. H. T. Parker delivered a lecture entitled 'Can Animals Think?', of which the following is an abstract:—

We are inclined to assess an animal's capacity for thinking by the aptness or the complexity of its behaviour. But in all animals behaviour is to a great extent innately determined, and does not call for thinking at all. Even actions which are learned do not of necessity originate in deliberation: they may be no more than modifications brought about by particular elements in the environment.

The question cannot well be discussed without some idea of what thinking implies. Even in its most elementary forms, thinking goes beyond immediate experience to a realization of meaning. When thought governs action, it does so by ideal construction, that is, by living through in imagination an experience which may later be lived through in fact. This is planning or forethought. One may not admit evidence for thinking in animals unless this element of forethought is present.

The cases of 'Clever Hans' and the Elberfeld horses are instances of learned reactions to barely perceptible signals, and do not involve thinking at all. The homing powers of dogs or other animals are instinctive and not rational. The hoarding tendencies exhibited in many animals, from squirrels to ants, if ascribed to thinking, could only be called stupid. It is only when we come to higher animals—dogs, cats, rats, racoons—that there is any evidence of true thought. This is most marked in the case of chimpanzees, as Kohler's experiments disclose.

The main instrument of human thought is language. The fact that no animals possess language except the elementary language of emotion restricts their thinking to a very rudimentary type.

Northern Branch

Annual Report, 1940

Meetings of the 1940 Session, other than the Annual Meeting and Public Lecture and the July Meeting (Demonstration at Commonwealth Health Laboratory), were held in the Lecture Room at the Queen Victoria Museum and Art Gallery. The extended programme of meetings initiated last year was maintained.

20TH MAY, 1940

Annual Report and Public Lecture

The Annual Meeting for 1940 was held in the class-room, Public Library, at 7.30 p.m.

Mr. F. Smithies presided. The following were elected officers for 1940:—

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: Mr. E. O. G. Scott.

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

The Annual Report and the Statement of Accounts, which showed a credit balance of £29 17s. 1d., were read and adopted.

The Annual Meeting was followed, at 8 p.m., by a public lecture, 'Romance of Tasman's Peninsula' by Rev. Lewis E. Barnard. The lecture was given in the Public Library Hall.

Mr. Barnard first gave a general account of the history of Tasman's Peninsula. The natural advantages of the Peninsula as the site for a penal colony were pointed out, and consideration was given to the methods of guarding Eaglehawk Neck devised by Capt. O'Hara Booth.

While the story of Tasman's Peninsula is inevitably largely the story of the penal system in Tasmania from the date of the foundation of Port Arthur, the lecturer chose to dwell chiefly upon the romantic, rather than the sordid, aspect of the period of occupation. Features dealt with included the signalling system, defence of the Neck, Martin Cash and his two escapes from Port Arthur, the history of the Church, the convict railway, and Commandant's house.

All phases of the subject were abundantly illustrated by means of lantern slides, a large number of the pictures shown depicting scenes at the settlement during the period of occupation.

24TH JUNE, 1940

The President, Mr. F. Smithies, presided.

Mr. E. O. G. Scott gave an illustrated lecture on 'Recent Researches on Fishes'.

Mr. Scott first touched briefly on the increasing differentiation of knowledge with the advance through the ages of science, and drew attention to the degree of specialisation that now characterises even restricted fields in biology. Some reminiscences of prominent ichthyologists in various parts of the world met by the lecturer on a recent tour were given, and reference made to some of the more important and more interesting researches carried out by them.

The introductory talk was followed by the showing of a series of lantern slides to illustrate recent researches on such subjects as fish locomotion; mass psychology; round-about paths, and the teaching of food-routes to fish; the influence of pH on growth; Australian investigation on life-history of pelagic fishes; influence of physical and chemical factors of the environment; matroclinous inheritance in *Mollienisia*; and allied topics.

The lecture was followed by a discussion, in which Mr. Holmes, Mr. Fricke, Mr. Evershed and others participated.

15TH JULY, 1940

The President, Mr. F. Smithies, presided.

Instead of the usual lecture, the meeting for July took the form of a demonstration by Dr. R. Y. Mathew, Medical Officer in Charge Commonwealth Health Laboratory, of the work of that institution.

Dr. Mathew gave a general account of the work of the Laboratory and indicated something of the scope and nature of its routine work. He had prepared about a dozen exhibits designed to show, by means both of actual specimens and explanatory notes, some standard methods of diagnostic procedure in the case of such diseases as tuberculosis; diphtheria; typhoid, and allied fevers; pernicious anaemia; several venereal diseases; etc. Associated with these exhibits were others illustrating various aspects of the investigation of the state of the blood. At the conclusion of Dr. Mathew's introductory talk, occupying about three-quarters of an hour, members circulated freely throughout the Laboratory, and inspected at leisure the interesting exhibits prepared for their examination.

As an addendum to his general remarks, Dr. Mathew briefly described, and showed examples of, biological products prepared at the Commonwealth Serum Laboratories, Melbourne.

An interesting discussion, in which the President, Mr. A. E. Evershed, Major Smith, Mr. F. J. Heyward, and the Secretary participated, followed the conclusion of Dr. Mathew's address. After members had finished their examination of the exhibits, demonstrations were given of the use of various types of apparatus employed in the institution's work, and a general tour of the Laboratory was made under the guidance of the lecturer.

19TH AUGUST, 1940

The President, Mr. F. Smithies, presided.

Mr. J. D. Valentine gave a lecture on 'Flax'.

Mr. Valentine gave a general description of the Flax Plant, *Linum*, and spoke of its importance as a source of oil and fibre—world-crop covers 19,000,000 acres, of which more than two-thirds is grown for seed, from which is obtained linseed oil. Attention was drawn to the fact that a special variety of the common flax, *Linum usitatissimum*, is used for the fibre of commerce.

The speaker then traced the history of flax and of the production of linen from the earliest times, giving some account of the important part it played in various civilisations, such as the Egyptian, Phoenician, Roman, and Grecian. Special attention was paid to the story of the flax industry in England and Ireland.

After enumerating some of the uses in wartime (for manufacture of 'planes, canvas, cordage, etc.), he spoke of the shortage of raw material due to the cessation of exports from Russia (which produces more than four-fifth of the world's supply). An account was then given of the scheme, sponsored by the British Government, for the planting in Australia of 20,000 acres (Tasmania's share 1,300 acres), with 400 tons of seed from England.

Mr. Valentine then traced in detail the process of manufacture of linen to the weaving stage; and afterwards proceeded to discuss the agricultural side of the problem, with detailed observations on the conditions and methods of growth, time of planting, suitable soils, fertilizers, methods of harvesting, etc.

The lecture was followed by a discussion in which Mr. Rolph, Mr. Smithies, Mr. D. V. Allen, and Mr. Evershed took part.

16TH SEPTEMBER, 1940

The President, Mr. F. Smithies, presided.

Dr. A. N. Lewis, who was welcomed to the Northern Branch by the President, gave a lecture on 'Tasmanian Physiographical History'. Before dealing with the subject of his talk, Dr. Lewis expressed pleasure at being present as a representative of the Council of the parent Society, and spoke of the helpful effect of interchange of lecturers between Hobart and Launceston in maintaining and extending general reciprocity between the parent body and the Branch.

Dr. Lewis then gave an illustrated lecture on 'Tasmanian Physiographical History'.

Dr. Lewis introduced his subject by briefly considering the importance of the environment to the individual and community. With the aid of an extensive series of lantern slides, depicting geologically interesting localities in all parts of the State, he gave an account of general physiographical principles, and pointed out the chief factors concerned in shaping the configuration of the landscape. Special attention was paid to the work of rivers, and the mode of action of this agency was dealt with in some detail. Consideration was also given to the effects of earth-movements in causing elevation and depression of the land; and to the various factors constantly at work in shaping the landscape.

After thus laying down some general principles, the speaker proceeded to trace in outline the story of the moulding of Tasmania. Points that received special attention included the formation of the present plateaux (now standing at a height of 3000-4000 feet), at, or near, sea-level; the comparatively recent elevation of these regions; the present stage of erosion; the partial rejuvenation of rivers such as the South Esk; the sharp line of demarcation between the older strata of the West Coast and the newer formations of the Midlands; the effects of pressure from the south-west; the history and nature of recent lava-flows; the order of deposition of various strata; the comparatively late intrusion of the diorite; varves on the West Coast; moraines; and the influence of ice-action generally.

Dr. Lewis having invited questions, there was an interesting discussion at the conclusion of the lecture.

21ST OCTOBER, 1940

The President, Mr. F. Smithies, presided.

Mr. H. J. King screened a series of Natural History Films, prepared in connexion with the educational programme of the Queen Victoria Museum, and gave a short address on 'Colour Photography'.

Mr. King briefly outlined the history and development of the production of camera-pictures in colour, and described the different principles adopted in the various commercial methods. The Kodachrome process, which was used in the present undertaking, was dealt with in some detail, and the various stages of processing the exposed film were explained. He concluded his address by reviewing the circumstances in which the films were made and by recalling some of the interesting incidents associated with their preparation. The Museum Natural History Films were then projected by Mr. King, who delivered a running commentary on them. An additional short film on Tasmanian Natural History was next screened, and was followed by one of Mr. King's own films depicting the Cradle Mountain Reserve.

At the conclusion of the meeting, supper was served in the Historical Art Gallery.

COUNCIL MEETINGS

Council Meetings were held on the 2nd May, 18th June, 18th July, 5th August, 2nd September, 4th October, 16th December.