

and parts of the west of England, as Grassholme and Anglesey. A private Bill was passed in 1932 to protect the species from September 1 to December 31, excepting under an order of the Ministry of Agriculture and Fisheries, and this should be a great advantage, for though preying on salmon, the grey seal is probably beneficial in destroying vast numbers of dog-fish (*Naturalist*, June 1932). The grey seal probably also feeds largely on cuttlefish, and as its marine food is largely cod, the voracity of which among the fry of marketable fish is notorious, it does no damage to salmon fisheries (*Field*, April 2, 1932).

As a breeding species, the grey seal seems confined to the North Atlantic, chiefly the British Isles, Iceland, Scandinavia and occasionally Greenland and off Nova Scotia and Labrador. In the Shetland Islands and the Orkneys, the young are produced from September to November, but in Norway often not until February. Seal-hunting in Scotland used to take heavy toll of the species at breeding time, and Selby (*Ann. and Mag. Nat. Hist.*, Feb. 1841) records one killed on the Farn Islands weighing upwards of 47 stone. The grey seal is probably the commonest seal on the west coast of the British Isles, and has frequently been confused with the common seal (T. J. Moore, "Report on Pinnipedia and Cetacea of Liverpool District", *Proc. Liverpool Biol. Soc.*, 3, 263; 1889). A great deal has still to be noted on the feeding habits of the species, for though it was stated in the House of Lords during discussion of the Bill of 1932 that the grey seal eats 20 lb. of fish a day, there is little evidence. The cheek-teeth take the form of pointed spikes without cusps, as in Weddell's seal (*Leptonychotes weddelli*) which feeds largely on cuttlefish and Crustacea as well as fish. In old age the seals would probably subsist largely on seaweed.

#### Ospreys in Autumn

Although ospreys (*Pandion haliaëtus*) have not bred in the British Isles for nearly twenty years—the last pair are believed to have nested on Cameron's Island, Loch Arkaly, Inverness-shire—many immature specimens visit the east and south-east of England on their autumn passage from Scandinavia with a degree of regularity that is not always realised. Quite a large passage occurred in September and October 1930 (*British Birds*, 24, 5–11) when specimens occurred at Loch Lumart, Argyll; Grantown; Yarmouth; Hickling Broad, Harleston, Hornsea Mere and Roekland, Norfolk; Lowestoft; Surrey; Lewes, Sussex; Hertfordshire and Rutland. A number of the birds were needlessly shot. On July 1–19 of the past summer, a specimen frequented Gunton Greatwater, Norfolk (*British Birds*, September 1933), where also a specimen was watched in the 1930 passage. In 1927, 1928 and 1932, specimens were fishing for herling on the Lune, North Lancashire.

Sufficient protection in suitable Scottish localities should induce the osprey to nest again, but the release of two specimens at Lochiel by C. W. Knight, in 1930, was unsuccessful owing to the late period of the year, probably due to the small trout being at the bottom of the lake; they moved away and possibly were shot. In former times, ospreys nested on the Lake of Menteith, Loch Assynt, Loch Lomond, Loch Tay and Loch-an-Eilan. The last ospreys in Perthshire nested on Loch Ordie in the spring of 1887 (Knight, *Discovery*, 11, 122, Feb. 1930).

In parts of the north Baltic countries of Europe, and North America, the osprey is still abundant, and

at Gardiner's Island, off Montauk Point, Long Island, New York, which is an osprey sanctuary, the species also nests on rocks, in fields, and even on the seaweed on the beach as well as the typical site in trees. Records of nesting in Ireland seem obscure and the species is more accidental in its visits than to England.

## Societies and Academies

### GENEVA

Society of Physics and Natural History, July 6. E. FRIEDHEIM, B. SUSZ and J. BAER: The energy of activation and the temperature coefficient of a biological reaction. The respiration of the larvæ of *Diphyllotothrium latum*. The considerable range of temperature over which these larvæ live has led the authors to make a kinetic study with this parasite. The trend of the oxygen absorption curves is identical with that obtained in the case of a heterogeneous catalysis. E. JOUKOWSKY: On the frequent presence of pyrites crystals in the diatoms of a lake chalk: their probable bacterial origin. The author has found in a lake chalk diatoms containing pyrites in several forms. The iron arises from material dissolved or in suspension in the water. This hypothesis is one which it is possible to control by experiment. G. TIERCY: Two theorems on ionisation in the Cepheids. The two theorems are based on the formula of the degree of ionisation. They show that the phase of maximum ionisation (the youngest spectrum) occurs after that of the maximum temperature and before that of the light maximum. M. GYSIN: Petrographical researches in the Haut-Katanga. (5). The formations of the system of Muva. This system includes the whole of the formations previous to the base conglomerate of Roan. The author distinguishes twelve principal types of rocks. G. GUTZEIT, M. GYSIN and R. GALOPIN: An attempt at the indirect chemical determination of the minerals in a polished surface by the drop test. A. WEINSTEIN: The theory of liquid jets taking capillarity into account. F. CHODAT and M. JUNQUERA: The endocellular hydrogen donors of yeast and their variation as a function of the age of the cultures. The authors give a report of their researches on the variation of the endocellular hydrogen donors of yeast with increasing age of the cultures. They add certain observations on the specific rôle of various buffer systems. L. REVERDIN: The presence of a wedge in an undescribed specimen from the older lacustral Neolithic. The author exhibits a specimen arising from the lower level of the neolithic remains of Port-Conty (Neuchâtel). It is composed of a fragment of hollow stag's horn, fitted with a wooden handle. Microscopic examination shows that this handle has been perforated by a wedge of a different kind of wood. The complete instrument might be either a club or the end of a hatchet handle, the fragment of horn acting as a sort of grip. G. GUTZEIT, R. MONNIER and R. BACHOUKOWA-BRUN: A new azo reagent for the magnesium cation, *p*-acetylamino-phenyl-5-azoxy-quinoline.

### ROME

Royal National Academy of the Lincei, May 21. F. SEVERI: The theory of the correspondences to valency on an algebraic surface (2): in the invariant sense. U. CISOTTI: Quotients of vectors and monogenic vectors. G. LORIA: Considerations and notes concerning the history of mathematics. E. ALMANSI:

Deformations of elastic strips (6). MARIA CARETTI: Lines of maximum slope of Green's function. A. DEL CHIARO: Observations on Schwarz's smoothing procedure. C. FOUSIANIS: Roots of algebraic equations. R. LUIS GOMES: Linear operators: Further remarks. M. MANARINI: The divergence of plurivectors in the spaces  $S_n$ . C. MIRANDA: Summation by diagonals of Fourier's double series. A. TONOLO: Integration of the Maxwell-Hertz equations in uniaxial crystalline media. G. BARBA: Some observations on the nuclei of Andreoli and of Evans. M. LELLI: Similar and homotetic wells. L. GIALANELLA: Calculation of the orbital elements of a spectroscopic double star. G. AGAMENNONE: Diurnal-nocturnal periodicity of earthquakes. D. BOCCIARELLI: Radioactivity of potassium. In agreement with earlier measurements of the magnetic deflection, absorption measurements show that the radiation of potassium comprises: a relatively soft  $\beta$  component ( $\sim 0.83c$ ), constituting about 60 per cent of the total intensity; a harder  $\beta$  component ( $\sim 0.93c$ ), forming almost the whole of the remaining intensity; a very hard  $\gamma$  component, equal to about 1.08 per cent of the total radiation. G. PICCARDI: New bands in the spectrum of vanadium monoxide. As with the spectra of many other monoxides, the use of an excessively high temperature involves the disappearance of groups of bands situated among the lower wave-lengths. A. ROSSI: The crystalline structure of  $LaSn_3$  and  $LaPb_3$ . For  $LaSn_3$ , the side of the unit cell has the value  $a_0 = 4.77n$  A.,  $n$  being a whole number; the calculated density is 7.516, but actual measurement gives lower values, owing to the presence of small cavities formed during crystallisation. For  $LaPb_3$ ,  $a_0 = 4.893n$  A., and the calculated density is 10.71. In both cases,  $n$  is probably 1. CARLA REINA: Contribution to the study of the Palæogenic in the Island of Rhodes. G. CIACCIO: Influence of the zones of the iris on the regenerative capacity of the crystalline in adult tritons. T. PERRI: Behaviour of the primary optical vesicle of amphibia *in vitro* (2). V. SANGIRARDI: Modifications in the lipid content of the central nervous system in the convulsive state. LUISA POZZI: Supposed activators of proteolysis in tumours. Experiments on the cancerous tissue of the rat (Ehrlich strain) fail to indicate that it contains any principle having an activating influence on the catheptic proteases of normal organs.

## SYDNEY

Linnean Society of New South Wales, June 28. H. M. R. RUPP: New South Wales and Queensland orchids. Investigations into the character of several forms allied to *Dendrobium speciosum* and *D. Kingianum* are discussed, and illustrated by diagrams of labella. A further contribution is made towards our knowledge of *Cryptanthemis Slateri*, Rupp, from Bullahdelah, a few flowers having been found in 1932 at a less advanced stage than those of the original 1931 discovery. Certain modifications of the original description are indicated. W. J. DAKIN and A. COLEFAX: Marine plankton of the coastal waters of New South Wales (1). The chief aims of the investigation are to discover (1) the seasonal variations in the plankton both qualitatively and quantitatively, (2) the relation of plankton changes to the physical environment, and (3) the eggs and larvæ of the food fishes of New South Wales waters and the conditions under which they are

spawned and hatched. The results to date show that the plankton at the station chosen is more or less free from littoral forms and is a complex of oceanic and neritic species. A distinct periodicity has been visible in connexion with most of the important constituents of the animal plankton. The zooplankton presents a maximum in the summer and another in the autumn. This first long-period study of the plankton conditions in Australian seas has, up to date, provided material of considerable interest from the point of view of geographical distribution and has indicated the occurrence of a regular and definite seasonal change in the plankton of these seas.

Royal Society of New South Wales, July 5. ALICE J. CHALMERS and FRANCIS LIONS. Binuclear isomerism of diphenyl type (2). Attempts to prepare 3-*o*-bromophenyl-4:7-dichloro indole-2-carboxylic acid, which should be resolvable, proved abortive, although 3-phenyl-4:7-dichloroindole-2-carboxylic acid and 3-*o*-bromophenyl indole-2-carboxylic acid were readily obtained. 1-*o*-bromophenyl- $\beta$ -naphthazole-2-carboxylic acid was also prepared but could not be resolved owing to its weakly acid character. A. E. BRADFIELD, A. R. PENFOLD, and J. L. SIMONSEN: Zierone. The previously assigned formula of  $C_{15}H_{20}O$  is corrected to  $C_{15}H_{22}O$ . It is thus shown to be a sesquiterpene ketone isomeric with eremophilone (*J. Chem. Soc.*, 2744; 1932; *J. Proc. Roy. Soc. N.S.W.*, 66, 420; 1932). This highly lævo-rotary sesquiterpene ketone is considered to be tricyclic with one ethylenic linkage. It yields a well-defined semicarbazone, melting point  $182^\circ$ , and a 2:4-dinitrophenylhydrazone, melting point  $95^\circ$ - $97^\circ$ . T. H. HARRISON: Brown rot of fruits and associated diseases of deciduous fruit trees. Field and laboratory experience of all organisms concerned led the author to conclude that there are three valid species represented: (1) *Sclerotinia fructigena*, Ader. and Ruh., (2) *S. laxa*, Ader. and Ruh., and (3) *S. fructicola* (Wint.), Rehm. The known geographic range of each is given. Evidence is submitted to show that the apricot *Monilia* of Europe is co-specific with the fungus hitherto known as *S. cinera*, Bon. Schröt. *S. laxa*, Ader. and Ruh. is the correct combination for this fungus. Pending general revision of the genus *Sclerotinia* the author prefers to retain the brown rot fungi in that genus.

## WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, 19, 581-640, June 15, 1933). JOSEPH C. BOYCE, DONALD H. MENZEL and CECILIA H. PAYNE: Forbidden lines in astrophysical sources. A survey of available data on the subject. Among the spectra of light elements identified are Ne III, Ne IV and F III. HARLOW SHAPLEY: Luminosity distribution and average density of matter in twenty-five groups of galaxies. The approximate mean density of matter in space is  $5 \times 10^{-20}$  galaxies per cubic centimetre, except where galaxies are nearly in contact, where it may be ten times as great. JOEL STEBBINS and C. M. HUFFER: Absorption and space reddening in the galaxy from the colours of *B*-stars. Observations with a photoelectric cell of *B*-stars, correlated with the work of other observers, indicate that our galactic system is filled near its median plane with a layer of dark matter, which reddens stars at a sufficient distance and obscures everything behind it. Globular clusters in the direction of the nucleus of our galaxy are probably all on this side of the galactic centre. The

dark matter of our galaxy may be greater in total mass than that which is luminous. FRANK H. SMITH: Preliminary studies of chromosome rings in *Brodiaea lactea*. 21-24 pairs of chromosomes are present and ring or chain associations of four small, four large or six chromosomes have been observed. CLYDE E. KEELER: Absence of the corpus callosum as a Mendelising character in the house mouse. The investigation is laborious because diagnosis of the condition necessitates sacrificing the animal, but none of the matings gives results which suggest other than that the character is a single Mendelian recessive, apparently not detrimental to the individual. P. A. SMITH: The topology of involutions. EDWIN H. HALL: On supraconductivity and the Hall effect. Experimental work at low temperature suggests that, in supraconducting lead, there is very little or no tendency for an electric current to move sideways through the metal (Hall effect). The validity of the work is questioned on the grounds that it assumes full penetration of a supraconducting metal by a magnetic flux—which is regarded as unlikely—and that the current observed in a supraconducting metal may be an aggregate of microscopic electric whirls within the metal and not a circumferential persistent current. GEORGE W. PUCHER and HUBERT BRADFORD VICKERY: The katabolism of the non-volatile organic acids of tobacco leaves during curing. Large losses (up to 100 per cent) of oxalic acid occur during dehydration with alcohol and usual modes of esterification; it should be extracted with ether. Oxalic, malic and monobasic acid content of leaves are little changed by curing; citric acid increases enormously and polybasic acids decrease very rapidly. HENRY BORSOOK and GEOFFREY KEIGHLEY: The energy of urea synthesis. Using a modification of the Warburg technique, increased oxygen consumption accompanied synthesis of urea from ammonium bicarbonate in Ringer's solution. GREGORY PINCUS and PRISCILLA WHITE: On the inheritance of diabetes mellitus. Treating the limited data available statistically and making certain assumptions, they give results in fair agreement with the supposition that the capacity for developing diabetes is inherited as a Mendelian recessive. A. E. NAVEZ: Growth-promoting substance and illumination. Apical parts of *Lupinus albus* seedlings grown in the light appears to give twice as much growth-promoting substance (auxin) as seedlings grown in the dark. T. CUNLIFFE BARNES and T. L. JAHN: The effect of ice and steam water on *Euglena*. The average increase in this organism in 10-16 days was 32 per cent in condensed steam water and 105 per cent in ice water.

### Forthcoming Events

[Meetings marked with an asterisk are open to the public.]

Monday, Oct. 9

UNIVERSITY OF LONDON, at 5.30—(at King's College).  
—Prof. Henri Baulig: "The Changing Sea Level"  
(succeeding lectures on Oct. 11, 12 and 16).\*

Tuesday, Oct. 10

ILLUMINATING ENGINEERING SOCIETY, at 6.30—(at E.L.M.A., Lighting Service Bureau, 2 Savoy Hill, W.C.2).—C. W. Sulley: Presidential address.

ROYAL SOCIETY OF MEDICINE (Section of Therapeutics and Pharmacology), at 5.—Dr. J. H. Burn: "A Pharmacological Approach to the Cause of Asthma" (Presidential address).

### Official Publications Received

#### GREAT BRITAIN AND IRELAND

The Royal Technical College, Glasgow. Calendar for the One Hundred and Thirty-eighth Session, 1933-1934. Pp. 460+xxiv. (Glasgow.)

Transactions of the Royal Society of Edinburgh. Vol. 57, Part 3, No. 27: Stratigraphical Observations in the Stor Fjord Region of Spitsbergen. By Dr. G. W. Tyrrell; with an Appendix on the Mesozoic Fossils from Spitsbergen collected by Dr. G. W. Tyrrell, by Dr. J. Weir. Pp. 675-697+1 plate. 3s. 6d. Vol. 57, Part 3, No. 28: The Structure of the Foot in certain Mosses and in *Anthoceros lewis*. By Nellie M. Blaikley. Pp. 699-709. 1s. 6d. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)

Annual Report of the Director of the Meteorological Office presented by the Meteorological Committee to the Air Council for the Year ended March 31, 1933. (M.O. 358.) Pp. 55. (London: H.M. Stationery Office.) 1s. net.

Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1486 (I.C.E. 841 and 841a): Oil Cooling for Aircraft. By B. C. Carter. Pp. 58+33 plates. 3s. 6d. net. No. 1528 (P. 3304a): Determination of the Stresses in Braced Frameworks. By L. Chittly. Pp. 36. 1s. 9d. net. No. 1538 (Strut. 129): Effect of Ribs on Stresses in Spars. By D. Williams and Dr. H. Roxbee Cox. Pp. 12+3 plates. 1s. net. No. 1542 (N. 81): Silencing Aircraft. By Dr. A. H. Davis. Pp. 10+2 plates. 9d. net. (London: H.M. Stationery Office.)

The Journal of the Institution of Electrical Engineers. Edited by P. F. Rowell. Vol. 73, No. 441, September. Pp. 213-320+xvi. (London: E. and F. N. Spon, Ltd.) 10s. 6d.

The Detection and Determination of Small Amounts of Inorganic Substances by Colorimetric Methods. By N. Strafford. Pp. 36. (London: Institute of Chemistry.)

Proceedings of the Linnean Society of London, Session 1932-33, Part 3, including Presidential Address by Prof. F. E. Weiss: Variegated Foliage. Pp. 105-150. (London: Linnean Society.) 1s. 6d.

The North Staffordshire Field Club, Transactions and Annual Report, 1932-33. Edited by the Rev. E. Deacon. (Vol. 67.) Pp. 155+A75-A106. (Stafford.) 7s. 6d.

#### OTHER COUNTRIES

Journal of the Federated Malay States Museums. Vol. 17, Part 2, July. Pp. 223-417. (Kuala Lumpur.)

Proceedings of the American Philosophical Society. Vol. 72, No. 4. Pp. 215-283. (Philadelphia.)

Field Museum of Natural History. Anthropology Leaflet 31: Pre-historic Man: Hall of the Stone Age of the Old World. By Henry Field. Pp. 44+3 plates. (Chicago.) 25 cents.

University of Washington Publications in Anthropology. Vol. 5: The Sanpoil and Nespelem; Salishan Peoples of Northeastern Washington. By Verne F. Ray. Pp. 237. (Seattle, Wash.: University of Washington Press.) 2 dollars.

Zoologica: Scientific Contributions of the New York Zoological Society. Vol. 16, Nos. 1, 2 and 3: Deep-Sea Fishes of the Bermuda Oceanographic Expeditions. No. 1: Introduction; No. 2: Family Alepocephalidae; No. 3: Family Argentinidae. By William Beebe. Pp. 147. (New York City.)

Annals of the Royal Botanic Garden, Calcutta. Vol. 13: Asiatic Palms—Coryphææ. Posthumous Work by Dr. Odoardo Beccari. Revised and edited by Prof. Ugo Martelli. Pp. vii+356. 50 rupees; 75s. Plates. Pp. v+102 plates, 26.8 rupees; 40s. 6d. (Calcutta: Bengal Secretariat Book Depot.)

Memoirs of the Geological Survey of India. Vol. 63, Part 1: The Geology of Sirohi State, Rajputana. By A. L. Coulson. Pp. vii+166+xxii+12 plates. (Calcutta: Central Book Depot.) 7.8 rupees; 12s.

Sudan Government. Annual Report of the Gezira Agricultural Research Service for the Year ended 31st December, 1932, relating to Experimental Results obtained in the Season 1931-32. Pp. ii+172. (Wad Medani.)

Scientific Reports of the Imperial Institute of Agricultural Research including the Reports of the Imperial Dairy Expert, Physiological Chemist and Sugarcane Expert. Pp. vi+165+3 plates. (Delhi: Manager of Publications.) 2.12 rupees; 5s.

Reports of the Great Barrier Reef Committee. Vol. 4, Part 1. Pp. v+36+7 plates. (Brisbane: Government Printer.)

Ceylon Journal of Science. Section D: Medical Science. Vol. 3, Part 2: Lorain's Infantilisim, due to Arrested Development of the Pituitary Gland. By Prof. W. C. Osman Hill. Pp. 115-156+plates 17-25. (Colombo: Bacteriological Institute; London: Dulau and Co.) 3 rupees.

Ceylon Journal of Science. Section B: Zoology and Geology. Spolia Zeylanica. Edited by P. E. P. Deraniyagala and G. M. Henry. Vol. 17, Part 3, May 19. Pp. 149-250+plates 28-39. (Colombo: Colombo Museum; London: Dulau and Co.) 3 rupees.

The Hokkaido Imperial University. Calendar 1933-1934. Pp. 213. (Sapporo.)

Technical Books of 1932: a Selection. Compiled by Donald Hendry. (Twenty-fifth Issue.) Pp. 28. (Brooklyn, N.Y.: Pratt Institute Free Library.)

Fifty Years of Museum Work: Autobiography, Unpublished Papers and Bibliography of Dr. Frederic A. Lucas. Pp. x+81+5 plates. (New York City: American Museum of Natural History.)

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