

unsatisfactory, and not in accordance with many observed facts. A development of Sidgwick's theory of chemical association is made, and a rule deduced giving conditions for such association. When two atoms of the same element can have a normal covalent and a co-ordinate electron pair bond with the same atom, and if quantum numbers  $n$  and  $l$  are the same for both electron pairs, association follows, the association being stabilised by quantum mechanical resonance under certain conditions. HF, H<sub>2</sub>O, HCl, ketones, oximes, carboxylic acids, esters, etc., are shown to fit in with the theory. A. R. PENFOLD, G. R. RAMAGE and J. L. SIMONSEN: The essential oil of *Calythrix tetragona*, var. 'A'. The leaves and terminal branchlets yield 0.7-1 per cent of an essential oil, the principal constituents of which are *d-a*-pinene, *d*-citronellol, *d*-citronellyl formate and the methyl esters of geranic and probably citronellic acids, the ester fraction comprising 60-70 per cent. This is the first natural occurrence of geranic acid which has been recorded.

#### WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, 20, 539-564, Oct. 15). R. H. SCIOBERETI: On the determination of the geocentric distance in the Laplace-Leuschner direct method for parabolic orbits. H. K. BENSON and A. M. PARTANSKY: The rate and extent of anaerobic decomposition of sulphite waste liquor by bacteria of sea-water mud. Liquor from a works manufacturing paper pulp by the acid sulphite process was used. Temperature of incubation and dilution of liquor governed rate of fermentation but did not affect extent of decomposition. 85 per cent of the reducing sugars was destroyed. The reduction products, methane and hydrogen sulphide, were preferentially formed while sulphide was available; the oxidation product was carbon dioxide. It is stated that the evolved gases, based on the yield with fermentation at 36° C., had a heating value of 649 B.T.U. per cubic foot. J. L. WALSH: Note on the location of the critical points of harmonic functions. E. D. GOLDSMITH: Correlation in planarian regeneration. Planarians were made double-headed by longitudinal splitting. Removal of one head may then be followed by complete, retarded or no regeneration of the head. Failure of regeneration is correlated with the presence of the remaining head. Frequency of regeneration was greatest in a zone lying between levels just posterior to the eyes and anterior to the pharynx. The effectiveness of this region is possibly correlated with high formative cell number and high (SH) content. F. B. SUMNER: Does 'protective coloration' protect? Results of some experiments with fishes and birds. Numbers of mosquito-fish (*Gambusia patruelis*) were placed in two cement tanks, one painted white, the other black. After seven or eight weeks, equal numbers of black-adapted and white-adapted fish were removed and placed in a whitish coloured tank and two Galapagos penguins were released in the tank to hunt and eat them. A similar experiment was tried in a black tank, and the interval between release of fish and birds was varied. Of the fish consumed in the whitish tank, 61 per cent were 'blacks', 33 per cent were 'whites' and 1 per cent unidentifiable; of those consumed in the black tank, 27 per cent were 'blacks' and 73 per cent were 'whites'. Hence fish that harmonise in shade with their immediate surroundings are less likely to be eaten by certain birds; coloration here has a definite survival value.

### Forthcoming Events

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

#### Sunday, December 23

BRITISH MUSEUM (NATURAL HISTORY), at 3 and 4.30.—Dr. Isabella Gordon: "Crustacea of the Deep Sea".\*

#### Thursday, December 27

ROYAL INSTITUTION, at 3.—Prof. W. L. Bragg: "Electricity" (Christmas Juvenile Lectures. Succeeding lectures on December 29, January 1, 3, 5 and 8).

### Official Publications Received

#### GREAT BRITAIN AND IRELAND

The National Smoke Abatement Society. Fifth Annual Report, 1934-5. Pp. 28. The Smokeless Home. Pp. 12. (Manchester: National Smoke Abatement Society.)  
The National Institute of Industrial Psychology. Report 5: An Account of the Research Work carried out by the National Institute of Industrial Psychology during the Years 1921-34. Pp. 37. (London: National Institute of Industrial Psychology.) 2s. 6d.  
Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1603 (Ac. Tech. 805): Lift and Drag of a Wing Spanning a Free Jet. By H. Glauert. Pp. 8+1 plate. 6d. net. No. 1611 (A. 142b): The E.M.F. between Metals in Seawater. By J. W. Willstrop. Pp. 10+1 plate. 9d. net. No. 1614 (T. 3404): Abstract—Statistical Measurements of Turbulence in the Flow of Air through a Pipe. By Dr. H. G. H. Townend. Pp. 2. 2d. net. No. 1616 (Strut. 182): Buckling of a Linked Beam having a Strength in Flexure and Shear. By R. A. Fairthorne. Pp. 6+1 plate. 6d. net. (London: H.M. Stationery Office.)  
P.E.P. (Political and Economic Planning): Industries Group. Housing England: a Guide to Housing Problems and the Building Industry, presented in a Report by the Industries Group of P.E.P. (Political and Economic Planning). Pp. 158. (London: P.E.P.) 5s.  
Department of Scientific and Industrial Research. Report of the Water Pollution Research Board for the Year ended 30th June 1934; with Report of the Director of Water Pollution Research. Pp. iii+44. (London: H.M. Stationery Office.) 9d. net.

#### OTHER COUNTRIES

Report on the Administration of the Meteorological Department of the Government of India in 1933-34. Pp. ii+37+2 plates. (Delhi: Manager of Publications.) 1 rupee; 1s. 9d.  
U.S. Department of the Interior: Geological Survey. Bulletin 857-C: The Curry District, Alaska. By Ralph Tuck. (Mineral Resources of Alaska, 1932.) Pp. ii+99-140+4 plates. 10 cents. Professional Paper 176: Geology and Ore Deposits of the Breckenridge Mining District, Colorado. By T. S. Lovering. Pp. vi+64+15 plates. 1 dollar. (Washington, D.C.: Government Printing Office.)  
Advisory Department of the Imperial College of Tropical Agriculture. Research Abstract Report of the Agricultural Department, St. Lucia, 1933. Pp. 35. (St. Lucia: Government Printing Office, Castries.)  
Annual Report of the Special Officer Lac Inquiry to the Government of Bihar and Orissa (with the Financial Co-operation of the Empire Marketing Board) for the Financial Year ending March 31st, 1931. Pp. 15. Annual Report of the Special Officer Lac Inquiry to the Government of Bihar and Orissa (with the Financial Co-operation of the Empire Marketing Board) for the Financial Year 1931-32. Pp. 8. (Nankum: Indian Lac Research Institute.)  
Department of Agriculture: Straits Settlements and Federated Malay States. Economic Series, No. 5: Malayan Agricultural Statistics, 1933. By D. H. Grist. Pp. ix+71. 50 cents. General Series, No. 20: Reports of the Field Branch for the Year 1933. Pp. iii+259+4 plates. 50 cents. (Kuala Lumpur.)  
Southern Rhodesia. Geological Survey Bulletin, No. 27: The Geology of the Country around Filabusi, Insiza District. By J. C. Ferguson. Pp. 179+21 plates. (Salisbury.) 5s.  
U.S. Department of Agriculture. Farmers' Bulletin No. 1742: Game Laws for the Season 1934-35; a Summary of Federal, State and Provincial Statutes. By H. P. Sheldon and Frank G. Grimes. Pp. ii+38. 5 cents. Miscellaneous Publication No. 210: Status of Waterfowl in 1934. By W. B. Bell and E. A. Preble. Pp. 18. 5 cents. Technical Bulletin No. 430: The Physical and Chemical Characteristics of the Soils from the Erosion Experiment Stations, Second Report. By H. E. Middleton, C. S. Slater and H. G. Byers. Pp. 63. 10 cents. (Washington, D.C.: Government Printing Office.)  
U.S. Treasury Department: Public Health Service. Effect on the Eye of the Yellow Light of the Sodium Vapor Lamp. By James E. Ives. (Reprint No. 1640 from the Public Health Reports, Vol. 49, No. 32, August 10, 1934.) Pp. 9. (Washington, D.C.: Government Printing Office.) 5 cents.

#### CATALOGUES, ETC.

Conchology, Entomology, Geology, Ornithology, General Zoology, etc. (Catalogue No. 229.) Pp. 20. (London: Dulau and Co., Ltd.)  
Diary for 1935. Pp. 64+16+16+Diary. (Bonnybridge: John G. Stein and Co., Ltd.)  
The Wild-Barfield Heat-Treatment Journal. No. 3, Vol. 1, December. Pp. 28-40+2 plates. (London: Wild-Barfield Electric Furnaces, Ltd.)  
Calendar for 1935. (Newcastle-on-Tyne: C. A. Parsons and Co. Ltd.)