

to regard mathematics as consisting merely of formulæ and of rules which provide the means of performing the numerical computations necessary for solving certain categories of problems which occur in the practical sciences. Apart from the deplorable effect, on the educational side, of degrading mathematics to this level, the practical effect of reducing it to a number of rule-of-thumb processes can only be to make those who learn it in so unintelligent a manner incapable of applying mathematical methods to any practical problem in which the data differ even slightly from those in the model problems which they have studied. Only a firm grasp of the principles will give the necessary freedom in handling the methods of mathematics required for the various practical problems in the solution of which they are essential.

E. W. HOBSON.

#### GRANTS BY THE BRITISH ASSOCIATION

At the Sheffield meeting of the British Association the sum of £1,090 was appropriated for scientific work, the grants being as follows:

##### *Mathematical and Physical Science*

Turner, Professor H. H.—Seismological Observations .....	£60
Shaw, Dr. W. N.—Upper Atmosphere .....	25
Preece, Sir W. H.—Magnetic Observations at Falmouth .....	25
Gill, Sir David—Establishing a Solar Observatory in Australia .....	50
Gill, Sir David—Grant to the International Commission on Physical and Chemical Constants .....	30

##### *Chemistry*

Divers, Professor E.—Study of Hydro-aromatic Substances .....	20
Armstrong, Professor H. E.—Dynamic Isomerism .....	25
Kipping, Professor F. S.—Transformation of Aromatic Nitroamines .....	15
Kipping, Professor F. S.—Electro-analysis ..	15
Arnold, Professor J. O.—Influence of Carbon, etc., on Corrosion of Steel .....	15

##### *Geology*

Harker, Dr. A.—Crystalline Rocks of Anglesey	2
Tiddeman, R. H.—Erratic Blocks .....	10
Lapworth, Professor C.—Paleozoic Rocks ...	10
Watts, Professor W. W.—Composition of Charnwood Rocks .....	2
Watts, Professor W. W.—Igneous and Associated Sedimentary Rocks of Glensaul ....	15
Bourne, Professor G. C.—Mammalian Fauna in Miocene Deposits, Bugti Hills, Baluchistan .....	45

##### *Zoology*

Woodward, Dr. H.—Index Animalium .....	75
Hickson, Professor S. J.—Table at the Zoological Station at Naples .....	75
Shiple, Dr. A. E.—Feeding Habits of British Birds .....	5
Shiple, Dr. A. E.—Belmullet Whaling Station .....	30
Bourne, Professor G. C.—Mammalian Fauna in Miocene Deposits, Bugti Hills, Baluchistan .....	30

##### *Geography*

Chisholm, G. G.—Map of Prince Charles Foreland .....	30
Herbertson, Professor A. J.—Equal Area Maps .....	20

##### *Economic Science and Statistics*

Cannan, Professor E.—Amount and Distribution of Income .....	5
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##### *Engineering*

Preece, Sir W. H.—Gaseous Explosions ....	90
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##### *Anthropology*

Munro, Dr. R.—Glastonbury Lake Village ..	5
Myres, Professor J. L.—Excavations on Roman Sites in Britain .....	10
Read, C. H.—Age of Stone Circles .....	30
Read, C. H.—Anthropological Notes and Queries .....	40
Munro, Dr. R.—Artificial Islands in Highland Lochs .....	10

##### *Physiology*

Schäfer, Professor E. A.—The Ductless Glands .....	40
Sherrington, Professor C. S.—Body Metabolism in Cancer .....	6
Hickson, Professor S. J.—Table at the Zoological Station at Naples .....	25
Waller, Professor A. D.—Electromotive Phenomena in Plants .....	10

Waller, Professor A. D.—Anesthetics .....	20
Sherrington, Professor C. S.—Mental and Muscular Fatigue .....	25
Starling, Professor E. H.—Dissociation of Oxyhemoglobin .....	25

*Botany*

Scott, Dr. D. H.—Structure of Fossil Plants	15
Darwin, Dr. F.—Experimental Study of Heredity .....	45
Johnson, Professor T.—Survey of Clare Island	20
Oliver, Professor F. W.—Registration of Botanical Photographs .....	10

*Education*

Findlay, Professor J. J.—Mental and Physical Factors .....	10
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*Corresponding Societies Committee*

Whitaker, W.—For Preparation of Report ..	20
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*SCIENTIFIC NOTES AND NEWS*

SIR WILLIAM RAMSAY has been elected president of the British Association for the meeting to be held next year at Portsmouth. The meeting of 1912 will be at Dundee. The meeting of 1914 will be held in Australia in the cities of Adelaide, Melbourne, Sidney and Brisbane. The commonwealth government has voted £10,000 toward the expenses of the meeting, and the several states will make additional contributions.

THE Accademia dei Lincei of Rome has elected foreign members as follows: E. G. van de Sande Bakhuyzen in astronomy; John Henry Poynting for physics; Armand Gautier in chemistry; Wilhelm Waldeyer and Richard Hertwig for zoology and morphology, and Max Verworn and Ludimar Hermann for physiology.

DR. WILLY WIEN, professor of physics in the University of Würzburg; Dr. Felix Marchand, professor of pathology at the University of Leipzig; Dr. Friedrich Merkel, professor of anatomy at the University of Göttingen; Dr. Gustav Schwalbe, professor of anatomy at the University of Strasburg, and Dr. Oswald Schmiedeberg, professor of pharmacology at the University of Strasburg, have been elected corresponding members of the Berlin Academy of Sciences.

PROFESSOR CZERNY will preside over the second International Conference for the Study of Cancer to be held in Paris from October 1 to 5.

AT the thirty-eighth annual meeting of the American Public Health Association, held in Milwaukee, September 6 to 9, Dr. Robert M. Simpson, of Winnipeg, Man., was elected president.

DR. HERMAN A. SPOEHR, assistant in chemistry in the University of Chicago, has been appointed a member of the staff of the department of botanical research of the Carnegie Institution of Washington. Dr. Spoehr is investigating certain problems in plant physiology which lend themselves to the application of chemical methods.

MR. D. P. ROBERTS, electrical engineer at London, Ont., Canada, has been appointed electrical expert and inspector for the British Columbia government.

SEVERAL collections of bees from the British Museum and from the Berlin Museum were classified by Professor Theodore D. A. Cockerell at the request of those institutions this summer. During the latter part of the summer he has been working on a collection of fossils sent to him for classification by the American Museum of Natural History of New York.

DEAN MILO S. KETCHUM returns to the University of Colorado after a year's leave of absence. As a member of the firm, Crocker and Ketchum, consulting engineers, Denver, he has been designing and constructing bridges, viaducts, dams and reinforced concrete structures. He is now consulting engineer for the Albion dam which the city of Boulder is to build.

PROFESSOR JOSEPHINE TILDEN, of the department of botany of the University of Minnesota, who spent the year in New Zealand studying the algae of the southern Pacific, has returned to the university.

It is proposed to name the new hospital for contagious diseases at Buffalo after the late Dr. Ernest Wende, as a memorial of his services as a sanitarian and health officer.