

essential to know the frequency of occurrence of low readings and whether any of them are fortuitous. Such information can be readily obtained from the mean deviation, which takes account of all the deficiencies in the series. This is another reason for including some such measure of the variability of the rainfall in the curve of the predicted lowest values.

This exhaustive analysis of Scottish rainfall is of particular importance in that the Western Highlands of Scotland provide a promising field for the further development of water-power schemes, having a large area with an average annual fall of more than 80 inches (reaching locally 150 inches) and a smaller factor of variability than most other areas in Great Britain.

### The Spider Crabs of America.<sup>1</sup>

MISS RATHBUN has completed a very beautiful systematic monograph on the American spider crabs. It is a work of enormous labour, for no less than seventy-nine genera and nearly three hundred species are described, with minute details of their distribution and lists of the specimens examined from all localities. The figures are good photographs or clear diagrams and occupy nearly half the book, which is a most important contribution to the study of carcinology, and will be extremely useful to all systematists.

The companion volume is "The Grapsoid Crabs of America," forming Bulletin 97 of the United States National Museum, 1918, and here is to be found an introduction serving for both volumes, which are to be followed by others. The collections in the United States National Museum, embracing many hundreds of specimens, form the basis of both bulletins.

We have in the present volume a handbook for the study of American spider crabs which will be indispensable to workers in all countries. Some of these crabs have an extremely wide range of distribution; such are *Hyas araneus* and *Hyas coarcticus*, aptly termed "toad crabs," both of which are common on British coasts. *Hyas coarcticus*, which was originally described by Leach from British seas, is shown to have also a wide vertical range, extending from low water to (exceptionally) 906 fathoms.

The love of spider crabs for decoration is remarkable, and although in a work of this kind there is no room for details as to habits, still much may be learnt from it as to habitat and adaptation. Whether the animals actually decorate themselves with foreign substances or, without using them, are so like their environment that decoration is unnecessary, they are all so perfectly adapted to their surroundings that even in dead specimens one can usually recognise the kind of ground on which they live. The members of the Majidae are the most important of the "masking crabs," but even among these there are some which do not cover their bodies with extraneous matter. Thus we have the bright red *Thoe puella* in the fringing shallows living on broken pieces of coral which have portions of sponge scattered over them of a similar colour to the crab; and the hairy *Mithrax verrucosus*—the hiding-place of which is in rocky holes covered with madrepores—which only comes out to feed at night. In the smaller family, Parthenopidae, there are *Heterocrypta granulata*, the "pentagon crab," living on shingly bottom, bearing a striking resemblance to a freshly broken chip or flake of stone, and *Parthenope serrata*, which lives in the sand in shallow water with

only the rostrum, eyes, and afferent apertures exposed, these apertures being situated between the base of the finger and the margin of the orbit.

There are very good diagrams showing the nomenclature of the parts as used in the monograph, and the descriptions of the crabs and the keys are all clear and easy to understand.

### University and Educational Intelligence.

ABERDEEN.—Ordinances for the establishment of chairs in forestry and bacteriology have been approved of by Order in Council.

The Right Rev. E. W. Barnes, Bishop of Birmingham, has been appointed Gifford Lecturer for the period 1926–8.

CAMBRIDGE.—Mr. G. E. Briggs, fellow of St. John's College, has been reappointed as demonstrator in plant physiology. Mr. Briggs has in the past done effective research on carbon assimilation and growth.

The Royal Commission has issued amended regulations governing the initial appointments to be made under the new statutes.

Certain amendments to the regulations of the mechanical sciences tripos have been brought forward. The proposed changes are chiefly concerned with the regrouping and amendment of the "B" (advanced) papers, the special function of which is to grade the candidates.

The local nominees to the first committee of management of the new Polar Institute consist of the present Vice-Chancellor, and three antarctic explorers—Messrs. Debenham, Priestley, and Wordie. The Council of the Royal Geographical Society has nominated Dr. H. R. Mill as its representative.

A Gordon Wigan prize of 30*l.* has been awarded to Mr. F. H. Constable, fellow of St. John's College, for chemical research on "The Nature of Catalytic Action."

ST. ANDREWS.—The degree of D.Sc. has been conferred on Mr. James Forrest, lecturer in natural philosophy, University College, Dundee, for a thesis entitled "Magnetic Quality in Crystals; Part I., Magnetic Discrimination of Molecular Lattices; Part II., Stability of Molecular Lattices."

STERLING Fellowships for Research in the Humanistic Studies and the Natural Sciences at Yale University Graduate School have been established by a gift of 1,000,000 dollars from the trustees of the estate of the late John W. Sterling to stimulate scholarship and advanced research in all fields of knowledge. They are divided into two general classes: Research or Senior Fellowships, candidates for which must be of the standing of the Ph.D. degree; and Junior Fellowships, candidates for which must be well advanced in their work towards the Ph.D. degree. The annual stipends of the former range from 200*l.* to 500*l.* or more, dependent upon the character of the proposed investigation, and of the latter from 200*l.* to 300*l.* The fellowships are open equally to graduates of Yale University and other approved colleges and universities. Applications for the fellowships should be addressed to the Dean of the Graduate School of Yale University, New Haven, Connecticut, for Junior Fellowships, by March 1, and for the Senior Fellowships by April 1.

THE December number of the *University Bulletin* of the Association of University Teachers contains an article by Dr. Alex Hill, of the Universities

<sup>1</sup> Smithsonian Institution; United States National Museum. Bulletin 129: "The Spider Crabs of America." By Mary J. Rathbun. Pp. xx+613 +283 plates. (Washington: Government Printing Office, 1925.) 2 dollars.

Bureau of the British Empire, on the promotion of "Interchange" of university teachers and students. By this phrase is meant temporary migration or short visits by teachers and students from the universities of Great Britain to those of another country for study, research, or teaching. The article traces the growth of the movement and its connexion with the growth of specialisation among universities from the year 1903, when, at a conference of universities, Lord Bryce pointed out that special opportunities of studying mining, forestry, and other branches of applied science were offered by the universities in the overseas dominions. The migration of British graduates to U.S.A. has received a substantial impetus in the past few years through the establishment of fellowships financed from America—especially the Commonwealth Fund fellowships founded last year. As regards migration of teachers, the article indicates that while the system established in many American universities of granting "Sabbatical" leave—furlough for an academic year after six years of service as professor—coupled with grants by the Institute of International Education of travelling allowances, makes the migration of American professors to Europe comparatively easy, the absence of any corresponding system in universities in Great Britain stands in the way of further development of migration by their professors, though it does not prevent them from paying visits of a few days' duration to continental universities. The faith of our universities in the benefits of interchange of professors has not yet availed to make them adopt the principle of the Sabbatical leave, even to the extent of announcing their willingness to grant such leave in the event of funds being provided to meet the expense involved.

THE prospectus for the year 1926–27 of the Imperial College of Tropical Agriculture, Trinidad, embodies a new feature in the form of the Principal's report, and a register of present and past students of the College has been inserted. The College has entered upon a new phase as the new buildings, the foundation of which was laid in January 1924, have now been opened by the Governor of Trinidad, and are in use. The Principal's report covers the academic year 1924–1925, the third year in the life of the College, and the first year of the term of office of the new principal, Dr. H. Martin Leake. The report indicates steady and useful progress both in the number of advanced and diploma students and in the amount and character of the research and investigation work that has been carried on. Full details of the courses of study in agriculture, botany, chemistry and soil science, economics, mycology, tropical sanitation and hygiene, veterinary science and zoology and entomology are given, and it will be seen that full provision is made to enable students to gain a very sound knowledge of tropical agriculture in all its branches. Reference is made to a hostel which is to be provided for students as soon as possible. A hostel will be needed all the more now that the Colonial Office has arranged to send students, under the Milner Scholarship Scheme, for a year's training in tropical agriculture before they take up their appointments in one of the Colonial agricultural departments. Though the importance of a hostel is fully realised by the governing body, funds, we understand, are not yet available for the purpose, and it is very desirable that Government and private benefactions should be made towards this very essential need of the College. The Imperial College has, we feel sure, so great a future before it that we commend the institution to the notice of all those who take an interest in the agricultural development of British Colonies.

### Contemporary Birthdays.

**January 29, 1845.** Sir Robert Elliott-Cooper, K.C.B., Past. Pres. Inst.C.E.

**January 30, 1851.** Dr. Henry Ogg Forbes, F.R.G.S.

**January 31, 1868.** Prof. Theodore W. Richards, For. Mem. R.S.

SIR ROBERT ELLIOT-COOPER, born at Leeds, was educated there at the Grammar School, the headmaster of which at the time was Dr. (afterwards Bishop) Barry. Sir Robert's engineering pupilage began with the firm of Messrs. John Fraser of Leeds. Fifty years ago he settled in London to take up professional work. In 1912 he succeeded Prof. Unwin, F.R.S., as president of the Institution of Civil Engineers. His inaugural address dealt at length with the railways and works of the civil engineer in the overseas Dominions, the Crown Colonies, and the protectorates of the British Empire, many valuable statistics being brought together. During the War, Sir Robert was chairman of the War Office Committee of the Institution of Civil Engineers. He is a member of the executive committee of the National Physical Laboratory. It is interesting to note that Sir Robert's grandfather, when a young naval officer, sailed with Capt. Cook round the world, and was present at the discovery of Australia.

DR. H. O. FORBES, traveller, anthropologist, museum curator, was born at Aberdeen. Educated at the city's grammar school, he proceeded to the Universities of Aberdeen and Edinburgh. He is LL.D. of the former. So far back as 1878, Dr. Forbes was exploring in Keeling Islands, Java, Sumatra and Timor, work which led to other undertakings in scarcely known lands. In 1885 he was chief of an expedition to explore Mount Owen Stanley, New Guinea. Director of the Canterbury Museum, New Zealand, 1890–93, he afterwards became Director of Museums to the Corporation of Liverpool. In various capacities he has proved a staunch helper to the British Association. Among many early memoirs, Dr. Forbes is the author of "On the Contrivances for ensuring Self-fertilisation in some Tropical Orchids"; "The Chatham Islands: their Relation to a former Southern Continent."

PROF. T. W. RICHARDS, Nobel laureate in chemistry, was born at Germantown, Pennsylvania. Son of a painter of landscapes and marine subjects, his mother was the author of various poetical works. She it was who conducted in the home Richards's early education, which was continued at Haverford College and Harvard University. Afterwards there was intensive study at Göttingen, Leipzig and Dresden Technical School. Becoming an assistant at Harvard in 1889, Prof. Richards is now Erving professor of chemistry and Director of the Wolcott Gibbs Memorial Laboratory, Harvard, U.S.A. The Nobel prize in chemistry for 1914 was allotted to him in recognition of his exact determinations of the atomic weights of a large number of the chemical elements. At the laureate ceremonies, Prof. H. G. Söderbaum, of Stockholm, said: "The work he has accomplished as a reformer of chemical methods and practices is by no means the least insignificant phase of his achievements." The Royal Society's Davy Medal had been awarded earlier. So too, the Chemical Society's Faraday Medal, given on the occasion of the Faraday lecture. "The solution," said Richards, "of the cosmic riddle is of the greatest importance to humanity, because only through a complete understanding of his own structure and that of his environment can man obtain control of the necessary conditions of his existence."