

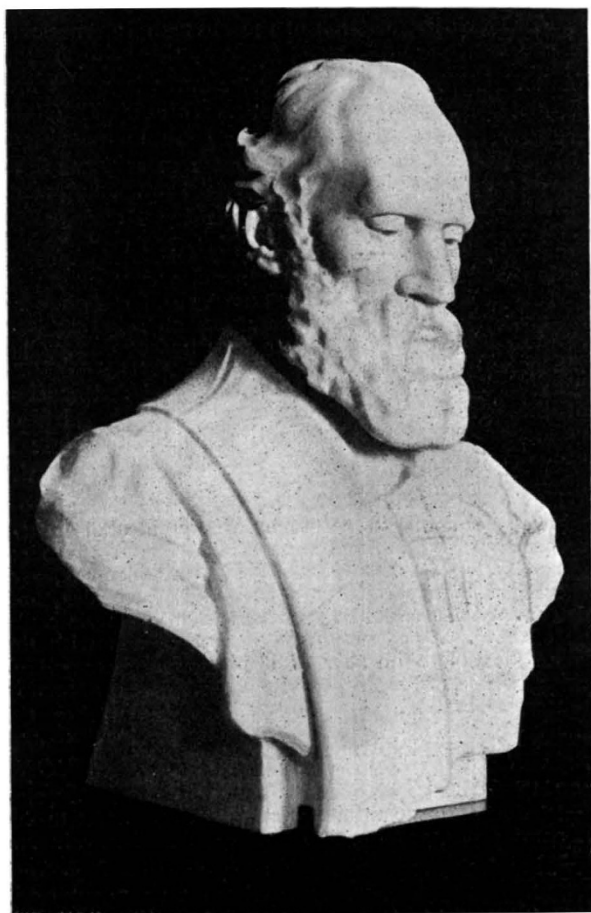
terms of a percentage of the average of mean daily areas are given as follows:—

Period	Percentage
13 $\frac{1}{3}$ months.	13.6
" 7 $\frac{1}{2}$ "	9.1
" 6 $\frac{1}{3}$ "	10.1

Mr. Royds concludes by adding that other independent prominence data which are sufficiently complete and continuous are, however, highly desirable in order to establish firmly the reality of these periods.

PRESENTATION OF BUST OF LORD KELVIN.

AT the general statutory meeting of the Royal Society of Edinburgh, held on October 27, a marble bust of the late Lord Kelvin, by Mr. A. M'Farlane Shannan, which had been given by Lady Kelvin



Marble bust of Lord Kelvin.

to the society, was formally presented and received. Sir William Turner, the retiring president, occupied the chair, and there was a large and representative gathering of the fellows and the general public. Prof. Crum Brown made the presentation in the name of Lady Kelvin. After referring to Lady Kelvin's thoughtful kindness in giving this beautiful bust as a permanent possession of the Royal Society of Edinburgh, and to his own lifelong friendship with Lord Kelvin, Prof. Crum Brown referred especially to Lord Kelvin's "supreme love of truth and of his intense interest in everything, however apparently trivial, connected with the constitution or with the working

of the physical universe. These were the prime motives to his work, and he carried it out in the same spirit. Having formulated a problem, he followed the straightest course to its solution. Of course, he encountered difficulties; these he did not evade, he surmounted them. To do so he had often to invent and construct special instruments of wholly novel type. . . Lord Kelvin was a great mathematician. He was never at a loss to find the mathematical key. . . Lord Kelvin was no intellectual miser. When in the course of his scientific work he came across something which could be so applied as to be of practical use, he developed this application, and thus became the inventor of instruments, truly scientific instruments, differing in character from those he made for purely scientific purposes only in this, that they were also used and very highly prized by those who were not necessarily scientific, who perhaps did not care about the dissipation of energy or vortex motion. These practical men, by using Lord Kelvin's inventions, came to see that pure science was not vain; they came to know something of the tree from its fruit. Lord Kelvin was quite free from selfishness or jealousy. He rejoiced in his own work and discoveries; he also rejoiced in the discoveries of others. In questions of first importance to man, where science gave no help, Lord Kelvin was a humble and devout disciple. In Lady Kelvin's name I hand over to the Royal Society of Edinburgh, through you, sir, as president, this beautiful work of art and striking likeness of Lord Kelvin, one of the greatest discoverers in pure science, a true benefactor of mankind, our honoured president and dear friend."

In accepting the bust in the name of the society, Sir William Turner referred more particularly to Lord Kelvin as a fellow of the Royal Society of Edinburgh. He joined the society in 1847, and continued so to be for the remaining sixty years of his life. His early communications were on the theory of heat, and their Transactions contained a valuable record of that brilliant work. Numerous communications followed, and his last paper was communicated in 1906, just a year before his death. This was upon the initiation of deep-sea waves, and, as all knew, the sea and the deep-sea formed important features in his practical career. Lord Kelvin occupied the presidential chair for three different periods, from 1873 to 1878, from 1886 to 1890, and from 1895 to his death in 1907. The second period was only for four years, the council of the society relieving him from the full five years at that time in order that he might be able to accept the invitation of the Royal Society of London to act as their president, an arrangement which was carried out by mutual understanding between the two councils. He asked Prof. Crum Brown to be good enough to convey to Lady Kelvin their most devoted and hearty thanks for that admirable bust of her late husband, which would be one of their precious possessions.

ORNITHOLOGICAL NOTES.

TO the *Bull. Soc. Imp. Nat. Moscou* for 1912 Prof. P. P. Suschkin contributes an article of more than 200 pages on the bird-fauna of the Minussinsk district of the Upper Yenisei, the Sahán Mountains, and the Urhanchen country, an area of special interest on account of being the meeting-place of several sections of the Eastern Holarctic fauna. To the north and east, for instance, is the realm of the East Siberian fauna, while on the west we enter the great plain of western Siberia, with a fauna differing but slightly from that of Europe. To the southward is the fauna of Central Asia, and, finally, to the south-west that of Turkestan.

The local distribution of the large number of species of birds found in this vast tract is shown in elaborate tables, which indicate not only the area visited by each, but likewise whether this includes steppe, wooded steppe, or alpine country. The paper should be of great value to students of zoological distribution.

In this connection may be noticed a paper by Mr. T. Iredale in the Transactions of the New Zealand Institute for 1912 (vol. xlv.) on the bird-fauna of the Kermadec Islands, in which stress is laid on the affinity between the birds of New Zealand on one hand, and those of New Caledonia on the other. It is suggested that the Kermadec Islands should be regarded as one province of the Australian region, exhibiting marked Polynesian affinities, Norfolk and Lord Howe Islands as a second, and New Caledonia as a third.

Turning to Australia, reference may be made to a coloured plate in the July number of *The Emu*, illustrating the remarkable variation in shape, size, colour, and marking displayed by the eggs of the piping-crow, or Australian magpie (*Gymnorhina tibicen*), which, it is claimed, exceeds that in any other bird. Nine specimens are figured, each from a different clutch, and each more or less unlike the rest, the variation in colour ranging from greenish-blue to reddish and sandy, and the markings from blackish spots to reddish scribblings. In an accompanying note Mr. A. F. B. Hall states that, unlike those of many sea-birds, all the eggs of any particular clutch are practically similar, and this similarity extends to all the clutches laid by each individual bird. This, it may be added, has an important bearing on the theory of "wagtail-cuckoos," "reed-warbler-cuckoos," &c.

Footprints of the larger species of moas are, it appears, but very rarely found, the two chief, if not only, recorded instances of their discovery having taken place at Turangui, Poverty Bay, in 1871, and on the Manawater River, Palmerston North, in 1894. At the latter locality four other footprints were exposed in 1911 by a flood, which washed away a bank 15 ft. high, revealing at its base a bed of clay containing four prints. These are described and figured by Mr. K. Wilson in the aforesaid volume of the Transactions of the New Zealand Institute. The tracks measure 18 in. across the foot, 12 in. from point of middle toe to heel, and 30 in. from heel to heel. Plaster casts have been taken.

In the first number of vol. ii. of *The Austral Avian Record* Mr. J. B. Cleland directs attention to abnormal coloration in the palate and pharynx of certain Australian birds, the variation taking the form of black and grey tints in some groups, and of yellow or orange in others. No suggestion as to the reason for this departure from the normal flesh-colour is suggested.

The autumn number (vol. v., No. 7) of *Bird Notes and News* is illustrated by a reproduction in black and white of an exquisite painting by Mr. H. Grönvold of the white heron, or egret, with the legend, "Where are my companions? Save me." The issue includes a chronological sketch of the movement against the plumage trade, from its rise in 1869 to the present day, with the text of the Government Plumage Bill. Reference is also made to the protection of birds at lighthouses, the slaughter of swallows in France, and bird-catching in this country.

In the October number of *British Birds*, Mr. H. F. Witherby records the results of a series of careful observations made by himself with the object of ascertaining the cause of the baldness of the area round the base of the beak in adult rooks. The investigation also included the moults undergone by the plum-

age generally. In rooks of the year the area which is bare in their parents is fully feathered; but Mr. Witherby records that a number of hair-like "filoplumes" grow amid the normal bristles, and that larger filoplumes, as well as down-like plumules, are hidden among the contour-feathers of the chin and throat. In the first—July and August—moult the feathers are renewed all over the head in the normal manner, although those on the area which eventually becomes bare are of a somewhat abnormal type. In the following January, however, or somewhat later, the feathers of this area are gradually shed, and not replaced—although most of the filoplumes and plumules persist—while the feather-papillæ undergo an abnormal development into curious pin-like growths over the now permanently bare area. R. L.

THE SYNTHESIS OF GLUCOSIDES BY MEANS OF FERMENTS.

AT the closing session of the eleventh International Congress of Pharmacy, recently held at the Hague, Prof. Emile Bourquelot, of Paris, delivered a lecture on the synthesis of glucosides by means of ferments, in which he described the results of his recent researches on this subject.

Hitherto it has not been proved that enzymes have anything but an analytical action; Prof. Bourquelot, who has been working on the ferments for something like twenty years, has, however, obtained results which justify the conclusion that the decomposing action continues up to a certain point only, and that at this point a synthetic action begins. He gives as an example the action of emulsion on arbutin; one of the products of decomposition is hydroquinone, but the action ceases before the whole of the arbutin is decomposed. This he shows to be due to the presence of the products of decomposition, for when hydroquinone is added to a solution of the enzyme and the glucoside, the decomposing action of the enzyme is greatly retarded.

Having established this fact, Prof. Bourquelot allowed ferments to act upon methyl alcohol in the presence of glucose, and succeeded in forming methyl-glucoside β . He next dealt with other alcohols, and succeeded in synthesising a series of glucosides, and determined the conditions under which synthesis could be effected. By combining different sugars with the same alcohol, a number of hitherto unknown glucosides was synthesised, and the synthesis of many others is possible.

PHYSICS AT THE BRITISH ASSOCIATION.

THE meetings of Section A of the British Association at Birmingham were of great interest to the general scientific public and of considerable value to those more specially interested in the particular problems discussed and the papers read at the sectional meetings. English physicists, astronomers, and mathematicians attended the meeting in force. Among those who were present may be mentioned Lord Rayleigh, Sir J. J. Thomson, Sir Joseph Larmor, Prof. Rutherford, Prof. Bragg, Prof. Poynting, Prof. Hobson, Prof. H. H. Turner, Sir D. Gill, Dr. Glazebrook, Principal E. H. Griffiths, Prof. Lamb, Prof. Love, Prof. S. P. Thompson, and Mr. J. H. Jeans. A distinguished company of foreigners also attended, amongst whom were Madame Curie, Prof. H. A. Lorentz, Prof. E. Pringsheim, Prof. Arrhenius, Prof. R. W. Wood, and Dr. Bohr. With the president of the association a physicist, and Dr. H. F. Baker as sectional president, the personnel of the meeting was of great interest in itself, and in