

of European Russia the excess rose to $9^{\circ}0$. This region of high temperature extended eastward into Siberia, as far as the Irtysh, or to where the centre of the greatest excess of pressure prevailed. To the eastward of this area of highest pressure winds were northerly, and low temperature prevailed over the whole of the eastern part of Asia, the deficiency at Nertchinsk, on the Upper Amoor, being $6^{\circ}8$ below the normal. Here, again, just as happened in America, places having the atmospheric pressure equally high above their average presented the strongest contrasts of temperature. Thus at Nertchinsk pressure was 0.154 inch, and at Bogoslovsk 0.211 inch above their respective averages; but at Bogoslovsk, on the west side of the anticyclonic patch of high pressure, temperature was $15^{\circ}0$ above, whereas at Nertchinsk on the east side it was $6^{\circ}8$ below the average.

This time of the year being the summer of the southern hemisphere, pressure falls to the annual minimum in Australia, but during December, 1878, this annual low pressure was still further diminished. Pressure at this season also falls to the annual minimum in the North Pacific and North Atlantic, and we have seen that the low pressure of these regions was likewise still further diminished. But in the case of the Atlantic it was accompanied with a vitally important difference. The centre of lowest pressure of the North Atlantic in winter, which is commonly located about Iceland, was removed many hundreds of miles to southward, and an unwonted development of extraordinarily high pressure appeared to northward, overspreading the extensive region of, at least, Baffin's Bay, Greenland, Iceland, Farö, and Shetland.

It was to this region of high pressure that the extreme severity of our British weather at the time was due. This high-pressure region was intimately connected with, and in all likelihood occasioned directly by the atmospheric movements resulting from the enormous extent of low pressure to southward, with its large centres of still lower pressures in the United States, mid-Atlantic, and the North Sea, where pressures were respectively 0.146 inch, 0.322 inch, and 0.307 inch below the normals. If future inquiry establish such a direct connection between the areas of low and high pressure, it is evident that when we come to attempt, on scientific grounds, to forecast the weather of the coming season for the British Islands, we must look to the Atlantic for the data on which the forecast is to be based.

In the winter months pressure rises to the annual maximum over Central Asia, and in America about the region of the Rocky Mountains. In December 1878, however, pressure rose in both regions greatly above its usually very high average, the excess being nearly a quarter of an inch in the valleys of the Yenisei, Obi, Irtysh, and Tobal, about lat. 60° , and 0.200 in America in the Columbia Valley. It follows therefore that with the singular outstanding exception of the high-pressure area of Greenland, the meteorological peculiarities which make December, 1878, so memorable, arose out of a distribution of the earth's atmosphere, essentially the same that commonly obtains at this time of the year, but the usual irregularities in the distribution of the pressure appeared in more pronounced characters.

We have now had the pleasure, through the courtesy of the late General Myer, of presenting our readers with a series of Twelve of these unique Weather Maps, which open out a new future to meteorology. The map for December, 1878, closes the series which appears in NATURE. The questions which a perusal of these maps raises are of first importance, whether we consider the atmospheric changes they disclose, these being repeatedly so vast as to stretch across four continents at one time, besides being often profoundly interesting from their influence both on the food supplies and

the commercial intercourse of nations; or the large problems hereby presented, with hints toward their solution, which underlie physical geography, climatology, and other branches of atmospheric physics. We have thus had shown us from month to month, in a way not hitherto possible, the great atmospheric changes as influenced by oceans and continents, including the important parts played in bringing about these changes, by mountain ranges, extensive plateaux, and physically well defined river basins. Much yet, however, remains to be done, principally by extending the network of observation in order that the Weather Maps may show, in an approximately adequate manner, the meteorology also of the North Pacific and the southern hemisphere. Till this be done many fundamental questions cannot be discussed, such as the inter-relations of the different continents and oceans of the globe in their bearings on successive meteorological changes; and the important inquiry as to whether the pressure of the earth's atmosphere be practically a constant from month to month, and, if not, what are the conditions or forces on which the observed differences depend. For the bringing of this great international work to so happy a consummation, we look with confidence to the War Department of the United States, since this implies no more than a continuance of the same energy and enlightened liberality that have won for the Americans their high position in meteorology.

SEARLES VALENTINE WOOD

PALÆONTOLOGY has sustained a severe loss in the death of the veteran explorer of the English Pliocene deposits. Born towards the close of the last century, the late Mr. Wood was from an early age an ardent collector and student of the fossils so abundantly found in the crag-pits of East Anglia. At this period the facilities for collecting the fossils of the English Pliocene strata were much greater than at present. Fresh pits for the purpose of obtaining the shelly marls and sands, which were then extensively used for manure, were continually being opened in the counties of Norfolk and Suffolk, while at the present time the new chemical manures have caused the crag to be quite neglected by agriculturists. The geologist who visits the Eastern Counties at the present day to study the Pliocene has to content himself with such exposures as he can find in old pits, now often overgrown with vegetation and which are used as sheep-folds or stackyards.

Mr. Searles Wood, as he himself said, was born within sight of one crag-pit; he resided for a great part of his life in the crag country, and hoped to be buried within sight of a crag-pit.

In the year 1839 Mr. Searles Wood joined the Geological Society of London. The following year was marked by the establishment of the London Clay Club by seven earnest students of fossils, of whom we believe only Prof. John Morris, formerly of University College, London, still survives. The object which the members of the London-Clay Club set before themselves was the figuring and describing of the British Tertiary fossils.

The London-Clay Club was the forerunner of, and became merged in, the Palæontographical Society of London. This Society has published between thirty and forty volumes, which have appeared annually, and has accomplished a most valuable work in the illustration of our British fossils.

At a very early date Mr. Searles Wood and his friend the late Mr. Frederick Edwards agreed to divide between them the work of describing the mollusca of the English Tertiary formations. The absence of marine Miocene formations in this country divides our British Tertiaries into two great groups, the Older Tertiaries, in which the great majority of the mollusca belong to extinct species

and the Newer Tertiaries, or crags, in which a large proportion of the forms belong to species still living in the seas of some portion of the globe. Mr. Searles Wood naturally chose the latter group for his study, and Mr. Edwards the former.

Upon the great task he had set before himself Mr. Searles Wood appears to have entered with characteristic energy, and in 1847 the Palæontographical Society was able to issue its first volume, which was entirely from the pen of Mr. Wood, and consisted of a description of the Crag Univalves, illustrated by twenty-one plates. In the years 1850, 1853, and 1855 Mr. Searles Wood was able to publish the parts of his descriptions of the Crag Bivalves, illustrated by thirty-one plates.

It soon became evident however that Mr. Edwards had taken upon his shoulders a lion's share of the work, and his friend Mr. Wood, having completed his own task, had to come to the aid of his fellow-student of the Tertiary fauna. It was then agreed that Edwards should complete his description of the Older Tertiary Univalves and that Wood should take up the description of the Bivalves. Between the years 1859 and 1877 Mr. Searles Wood published his descriptions of the Eocene Bivalves, illustrated by twenty-seven plates.

Additional discoveries of fossils having afforded Mr. Wood fresh materials, a supplement to the "Crag Mollusca" was published by him between the years 1871 and 1873. This work was illustrated by twelve plates, and included a very valuable memoir on the strata from which the fossils were obtained, written by his son, Mr. Searles V. Wood, jun., and Mr. Harmer of Norwich, who have both done so much good work in unravelling the complicated problems connected with the geology of East Anglia.

Nor did the zeal of Mr. Wood allow him to rest even here; for in 1877, in spite of his advanced age, we find him commencing a supplement to his own and Edwards's work on the Eocene mollusca.

In the year 1860 the Geological Society recognised the great services rendered to science by Mr. Searles Wood by presenting him with the blue-riband of geology, the Wollaston Medal. Prof. Phillips, who, as president of the year, handed the medal to Mr. Searles Wood, spoke in terms of well-merited praise of the important works which were the result of his patient, persevering, and successful labours.

Mr. Searles Wood and his friend Mr. Edwards were remarkable examples of a type of scientific man which, happily for us, is far more common in this country than in any other. They were both engaged in the legal profession, but found time in their leisure hours to accomplish most excellent and useful scientific work. In the volumes of the Palæontographical Society the work of amateurs like Searles Wood, Edwards, and Davidson appears side by side with that of Richard Owen, Edward Forbes, and John Phillips. The subscriptions of the members cover the cost of engraving and printing, but all other charges are defrayed by the authors, who expect and receive no kind of payment for their important labours.

The valuable collection of Tertiary fossils made by Edwards and Searles Wood have fortunately been secured by the authorities of the British Museum for our National Collection. They will in the New Natural History Museum at South Kensington be more accessible for study than at Bloomsbury, and as they contain great numbers of type specimens, will be invaluable for purposes of reference to both British and foreign palæontologists.

Mr. Searles Wood, as Treasurer of the Palæontographical Society, took the heartiest interest in its success, to which his own labours have to such a great extent contributed. Those who had the pleasure of a personal acquaintance with Mr. Searles Wood will ever remember the kindly and genial manners by which he was distinguished.

J. W. J.

NOTES

THE following is the list of officers and council of the Royal Society nominated for the year ensuing. The election will take place as usual on St. Andrew's Day, November 30:—President—William Spottiswoode, M.A., D.C.L., LL.D.; Treasurer—John Evans, D.C.L., LL.D.; Secretaries—Prof. George Gabriel Stokes, M.A., D.C.L., LL.D.; Prof. Thomas Henry Huxley, LL.D.; Foreign Secretary—Prof. Alexander William Williamson, Ph.D.; other members of the Council—William Henry Barlow, Pres. Inst. C.E.; Rev. Prof. Thomas George Bonney, M.A.; George Busk, F.L.S.; Right Hon. Sir Richard Assheton Cross; Edwin Dunkin, V.P.R.A.S.; Alexander John Ellis, B.A.; Thomas Archer Hirst, Ph.D.; William Huggins, D.C.L., LL.D.; Prof. John Marshall, F.R.C.S.; Prof. Daniel Oliver, F.L.S.; Prof. Alfred Newton, M.A., Pres. C.P.S.; Prof. William Odling, M.B., V.P.C.S.; Henry Tibbats Stainton, F.G.S.; Sir James Paget, D.C.L.; William Henry Perkin, Sec. C.S.; Lieut.-General Richard Strachey, R.E., C.S.I.

It is proposed to erect a monument to Spallanzani in Scandiano, where the distinguished naturalist was born in 1729. A committee for the promotion of the scheme has been formed there, and at Reggio and Modena. A monument in marble is contemplated, more or less splendid according to the sum provided, and it will be inaugurated on August 21, 1885 (if circumstances do not allow of an earlier inauguration). The committee meanwhile propose (if practicable) to publish a new and accurate edition of the writings of Spallanzani, including some which have not hitherto appeared. Contributions are hoped for not only from Italians, but from foreigners generally among whom the work and principles of Spallanzani are honoured.

M. LEON HUMBLLOT, a well-known *naturaliste-voyageur*, has just returned to Paris from Madagascar with large and valuable collections. Amongst the living specimens (destined for the Menagerie of the Jardin des Plantes) are two examples of the aye-aye (*Chiromys madagascariensis*), which, M. Humblot maintains, it is now more difficult to procure in Madagascar than in Europe; a pair of the rare carnivore *Cryptoprocta ferox*, and specimens of several of the smaller lemuroids. M. Humblot has also brought a valuable series of mammals and birds in skin and a large collection of orchids.

No naturalist who visits Florence should omit to inspect the series of Italian vertebrates which has been brought together in the Reale Istituto degli Studi superiori, by the exertions of Prof. H. H. Giglioli. The collection embraces a series of authenticated specimens of mammals, birds, reptiles, batrachians, and fishes from every part of Italy and the adjoining districts which belong essentially to the same fauna, arranged in systematic order, and is far more complete than any other Italian collection of the same sort. Prof. Giglioli is preparing a catalogue of this collection as a basis for a new "Fauna Italica."

ON the 1st inst. a very fine Naval and Marine Engineering Exhibition was opened in the Corporation Galleries, Glasgow, altogether probably the finest exhibition of the kind we have had in this country. It is divided into five sections:—1. Naval architecture, including war vessels, sailing ships, paddle and screw steamers, yachts, dredges, and miscellaneous craft, boats and life-boats; (2) Marine engineering, including engines and parts of engines, boilers and boiler appliances, &c., governors; (3) Equipment, including anchors, boat-lowering apparatus, pumps and hydraulic machinery, steering-gear, telegraphs, windlasses, &c., machines and tools; (4) Navigation and harbour works; (5) Miscellaneous. The first section is of special interest, containing models of vessels of all ages and of all kinds, from