In other words, during the hottest months the influence of the heated land is powerfully felt, but during the other two-thirds of the year the peculiar distribution of the temperature is determined by the strong south-westerly winds and current of the Atlantic. This influence of the Atlantic on the temperature of Western Europe is enormous, the thermic anomaly for January being estimated by Prof. Mohn to be 10°·8 in the interior of Norway, 25°·2 in Scotland, 32°·4 in the north-west of Iceland, while in Lofoten it amounts to 41°·4. In May–June and in a slight degree in July–August, a large extent of cold water appears as if thrust out from the Arctic Sea west of Jan Mayen to the south-eastwards as far as Farö, deflecting and crowding together the whole of the isothermals over this region in a most remarkable manner. This is a point which well deserves the most careful investigation, not merely from its evident importance to the fisheries of this part of the Atlantic, but also from its meteorological significance, it being in May and June that atmospheric pressure reaches its annual maximum, northerly and easterly winds their greatest predominance, the weather becomes brightest and clearest, and the rainfall sinks to its annual minimum over the extreme north-west of Europe. An instructive comparison is also made between the temperature of the sea and that of the air, and a valuable discussion is added of the observations made at different depths of the sea between Iceland and Norway; but for these and other interesting points we must refer to the paper itself.

BIOLOGICAL NOTES

NEW FRESH-WATER RHIZOPODS.—For many years the small group known as Actinophrys, first accurately described by Ehrenberg, remained somewhat isolated, distinguished among unicellular forms by its nearly constant spherical form, and the persistence of its straight radiating processes or "pseudopodia." But in recent years a whole series of organisms has been described, and has attained sufficient prominence to constitute, with Actinophrys, an order denominated Heliozoa. Many interesting papers have appeared in the *Archiv für mikroskopische Anatomie* on these organisms, contributed by E. Hertwig, Lesser, Cienkowski, Greeff, and others; and in our own country Mr. W. Archer has been the most active and successful student of the Heliozoa, his papers having been principally published in the *Quarterly Journal of Microscopical Science*. From these one derives an idea of these animalcules as being the most complex of the free forms which possess pseudopodia, and are at the same time unicellular; they are neither multicellular and differentiated like the Radiolaria, nor organised like the ciliated Infusoria. While a few forms, as Actinophrys, are quite devoid of skeleton, most of them possess certain hard parts, consisting, it may be, of a single solid and globular piece, but in other cases of very minute rod-shaped spicules, sometimes siliceous, sometimes easily soluble. These are either disposed so as to invest the main body of the organism more or less closely, or radially, projecting as spines. When food is taken, these minute hard parts can be pushed aside to allow access to the central body-mass; and the same occurs when indigestible material is thrust out. Locomotion is usually very slow; most Heliozoans move by balancing themselves on the tips of their pseudopodia, and thus very gradually rolling onwards. Multiplication of the organisms is effected by division, either simple, or occurring after encystation. Some forms are remarkable for containing a great abundance of chlorophyll granules.

RE-ARRANGEMENT OF THE ORDERS OF ENDOGENS.—At a recent meeting of the Linnean Society of London, Mr. Bentham proposed an entirely new arrangement of the orders of Endogens, which he believes to be more in accordance with their genetic affinities and the essential points of their structure, than any at present in use. He proposes to classify Endogens under four series, viz., 1. EPIGYNÆ; flowers with a double usually petaloid perianth; ovary usually inferior syncarpous. 2. CORONARIEÆ; flowers with a double usually petaloid perianth; ovary superior, almost always syncarpous. 3. NUDIFLORÆ; flowers usually achlamydeous, or with a dry perianth; ovary mostly apocarpous; and 4. GLUMALES; perianth replaced by membranous scales (pales or lodicules); ovary always uniovular. The orders are arranged thus in the four series:—in the first, Hydrocharideæ, Scitamineæ (including Musaceæ, Cannaceæ, &c.), Orchideæ, Burmanniaceæ, Irideæ, Amaryllideæ (including Hæmodoraceæ), Taccaceæ, Dioscorideæ, and Bromeliaceæ (?); to the second, Roxburghiaceæ, Liliaceæ (including Melanthaceæ, Smilaceæ, &c.), Pontederiaceæ, Philydraceæ, Xyrideæ, Commelynaceæ, Junceæ, and Palmæ; to the third, Pandaneæ, Aroideæ, Typhaceæ, Lemnaceæ, Naiades (including Juncagineæ), and Alismaceæ (?); and to the fourth, Eriocauleæ, Centrolepideæ, Restiaceæ, Cyperaceæ, and Gramineæ.

THE SENSATION OF SOUND.—At a recent meeting of the Vienna Academy a paper was communicated by Dr. Isidor Hein "On the Relations between Perceptions of Touch and of Hearing." His conclusions are these:—1. The sound produced by striking a solid body is always accompanied by a sensation of touch, which, like the sound, differs according to the nature of the body. If the sound is different in different parts of a body, there goes along with the variation of the sound, a variation in the touch-sensation; and if the surface be divided into several sections according to differences in sound, a congruent division may be made on the basis of touch. 2. On bringing a struck body towards a reflecting wall, the sound and touch-perceptions show similar variations. 3. To the touch-perception in question correspond vibratory motions of the exterior body, produced even with the weakest striking, whereas sound only begins to be perceived with impacts of a certain intensity. 4. The sense of touch is capable of perceiving vibrations and comparing the differences of these. It brings hereby to consciousness, a special quality of touch-sensation, which is to be distinguished from sensation of pressure. 5. This distinguishing power of the organ of touch, not sufficiently appreciated hitherto, offers practical medicine a peculiar mode of investigation, which greatly enlarges the doctrine of the physical symptoms of the human organism, and for which the author suggests the (German) name of "Erschutterungs-palpation."

THE ABSORPTION OF ORGANIC MATTER BY PLANTS.—In a communication from Prof. Calderon, of the Institute of Las Palmas, Canary Isles, he contests the ordinary view that the nitrogen of the tissues of plants is derived entirely from the nitrates and ammoniacal salts absorbed through the roots. He does not, however, adopt the old theory that the source is the free nitrogen of the atmosphere, but rather the nitrogenous organic matter which is always floating in the air. The nutrition of plants he divides into three classes: *necrophagous*, the absorption of dead organic matter in various stages of decomposition; *plasmophagous*, the assimilation of living organic matter without elimination, or distinction of any kind between useful and useless substances, such as the nutrition of parasites; and *biophagous*, the absorption of living organisms, such as that known in the case of insectivorous plants. A further illustration of the latter kind of nutrition is, according to Prof. Calderon, furnished by all plants provided with viscid hairs or a glutinous excretion, the object of which is the detention and destruction of small insects. To prove the importance of the nitrogenous substances floating in the air to the life of plants, he deprived air of all organic matter in the mode described by Prof. Tyndall, and subjected lichens to the access only of this filtered air and of distilled water, when he found all their physiological functions to be suddenly suspended.