

The following papers were read, viz.—

1. "Magnetic-term Observations for January, February, March, and April 1843," made at the Observatory at Prague, by Professor Kreil. Communicated by Samuel Hunter Christie, Esq., Sec. R.S.

2. "Hourly Meteorological Observations, taken between the hours of 6 A.M. March 17th, 1843, and 6 A.M. of the following day, being the period of the Spring Tides of the Vernal Equinox, at Georgetown, British Guiana." By Daniell Blair, Esq., the Colonial Surgeon, transmitted by Henry Light, Esq. Communicated by the Lords Commissioners of the Admiralty.

3. "On the minute structure of the Skeletons, or hard parts of Invertebrata." By W. B. Carpenter, M.D. Communicated by the President. Part II. "On the structure of the Shell in the several families and genera of Mollusca."

The author here gives in detail the results of his inquiries into the combinations of the component elements of shell as they are met with in the several families and genera of the Mollusca; and considers all these results as tending to establish the general proposition, that where a recognizable diversity presents itself in the elementary structure of the shell, in different groups, that diversity affords characters which indicate the natural affinities of the several genera included in those groups, and which may therefore be employed with advantage in classification, and in the recognition and determination of fossils.

The Society then adjourned over the Whitsun Recess, to meet again on the 15th instant.

June 15, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The following papers were read, viz.—

1. "On the supposed development of the Animal Tissues from Cells." By James Stark, M.D., F.R.S.E. Communicated by James F. W. Johnston, Esq., M.A., F.R.S.

The author controverts the prevailing theory of the development of animal tissues from cells, and denies the accuracy of the microscopical observations on which that theory is founded, as regards the anatomy of the adult as well as of the foetal tissues. He asserts that at no period of foetal life can rows of cells be discovered in the act of transformation into muscular fibres: and he denies that these fibres increase either in length or in thickness by the deposition of new cells. He contends that the ultimate filaments of muscles, as well as all the other tissues of the body, are formed from the fibrous portion of the blood, which is itself composed of globules that are disposed to cohere together, either in a linear series, so as to form a net-work of fine filaments, or in aggregated masses of a form

more or less globular, composing what have been termed fibrinous corpuscles. These corpuscles have been considered to be the nuclei of cells; but the author regards them as being merely accidental fragments of broken down tissues, adhering to the filaments, and noways concerned in their developement. The more regularly disposed granules, which are observed to occupy the spaces intervening between the filaments composing the ordinary cellular tissue, he considers as being fatty matter deposited within these spaces. He, in like manner, regards the observations tending to show the cellular origin of the fibrous, cartilaginous, and osseous tissues, as altogether fallacious; and maintains that the cells, which these animal textures exhibit when viewed under the microscope, are simply spaces occurring in the more solid substance of these structures, like the cavities which exist in bread. These views are pursued by the author in discussing the formation of the skin, the blood-vessels, and the nerves, and in controverting the theory of secretion, founded on the action of the interior surfaces of the membranes constituting cells.

2. "Contributions to Terrestrial Magnetism."—No. V. By Lieut.-Colonel Edward Sabine, R.A., F.R.S.

In this paper the author details and discusses the magnetic observations made on board Her Majesty's ships *Erebus* and *Terror*, between October 1840 and April 1841, being the first summer which the expedition under the command of Captain James Clark Ross, R.N., passed within the Antarctic Circle.

The elimination of the influence of the ship's iron in the calculation of the results of these observations occupies a considerable portion of the paper. Formulæ for this purpose are derived from M. Poisson's fundamental equations, and the constants in the formulæ are computed for each of the two ships, from observations made on board expressly with that object. With these constants, tables of double entry are formed for each of the three magnetic elements, namely, declination, inclination, and intensity, giving the required corrections of each, for all the localities of the voyage.

These and other corrections being applied, the results are tabulated and charts formed from them. The full consideration of the charts is postponed until the whole of the materials collected by the Antarctic Expedition shall be before the Royal Society. Meanwhile the paper concludes with the following general remarks, viz.

1. The observations of declination, particularly those which point out the course of the lines of 0 and of 10° east, indicate a more westerly position than the one assigned by M. Gauss in the '*Atlas des Erdmagnetismus*,' for the spot in which all the lines of declination unite. The progression of the lines in the southern hemisphere generally, from secular change, is from east to west; the difference consequently is in the direction in which a change should be found in comparing earlier with more recent determinations.

2. The general form of the curves of higher inclination in the southern hemisphere is much more analogous to that in the northern than appears in M. Gauss's maps. For example, the isoclinical line