

round by Barnaul, Irkutsk, Nerchinsk, Pekin, Shanghai, and Port Blair, whereas over the East India Islands, New Zealand, Tasmania, Australia, Mauritius, and the east of Africa, so far as observations supply information, pressure was under the average, and very largely so over the whole of the southern portions of this wide-spread region.

Between the high pressure of the North Atlantic and the relatively high pressure of Southern Asia, there was interposed an extensive tract of low pressure, stretching from Portugal to the Yenisei, and from Egypt to the North Cape, having its centre 0.244 inch below the average near Moscow. To the east of the Ural Mountains temperature rose to 4°·3 above the average; but on the west side of this depression temperature was 5°·0 at Warsaw and 8°·5 at Kem, west of the White Sea, below the average of July.

A striking feature of the distribution of the earth's atmosphere in July 1878, is the enormous breadths over which pressure was below the average, and the comparatively restricted regions over which it stood above the average. An explanation of this seeming anomaly is furnished however by the figures on the map for July, which presents for the first time a monthly mean for the centre of the Pacific Ocean. This mean is from the Sandwich Islands, and shows an excess there above the normal for July, amounting to the large figure of 0.300 inch.

Thus then the meteorology of the globe for July 1878, stands out as a singular phenomenon, characterised by these broad features, viz. :—(1) a greatly reduced pressure over a large portion of the Southern Hemisphere as compared with what usually obtains there in the winter month of July; (2) a much greater diminution of the pressure than usually takes place in the summer month of July over the land of the Northern Hemisphere, over North America, over Central and Eastern Europe, Western and Central Siberia; and (3) a much larger increase of pressure than usually occurs in the Northern Hemisphere over the great oceans in July, the area of unusually high pressure being extended, as regards the Atlantic to the north-east as far as Christiansund, and as regards the Pacific to westward over Central and Southern Asia, as far as the Arabian Sea. It may be worth remarking that this increased pressure over the oceans and diminished pressure over the land of the Northern Hemisphere is in accordance with what might be expected to result from an increased solar radiation; whilst on the other hand the increased pressure over Southern and Central Asia, and diminished pressure in the Southern Hemisphere, is not in direct accordance with this supposition. The point here referred to will however receive an illustration from subsequent numbers of the Weather Maps, by which it is probable that different results as regards the states of the atmosphere will appear, with the varying states of the sun from year to year.

The future maps of this international series will be eagerly scanned in connection with many of the larger questions of atmospheric physics, as well as those directly practical questions of climate with which we have been almost exclusively concerned in this article. It is plain that we need not hope to succeed in dealing with most of the larger problems proposed by meteorology without the help of the data laid before us in so full and convenient a form by the International Weather Maps of General Myer. It is only thus that we can trace to their proximate causes such climatal phenomena as the recurring droughts of India and the cold, sunless summer of the British Islands in 1879, and show their true relations to the great movements of the atmosphere. For this great work the highest praise must be conceded to General Myer, whose genius struck out this cosmopolitan scheme of observation, and whose powers of organisation and determination of will bore down all obstacles which stood in the way of its realisa-

tion; and he has the heartiest wishes of all for its more complete extension over British North America, South America, Africa, and among the islands of the Pacific.

WILLIAM SHARPEY M.D., F.R.S.

DR. SHARPEY, whose death we regret to announce took place on Sunday, was born April 1, 1802. He entered on the study of medicine at the University of Edinburgh in 1818. In the autumn of 1822 he came to London, where he spent three months in dissecting, and then proceeded to Paris, and occupied the following winter in the study of clinical medicine and surgery in the hospitals. In 1823 he graduated in Edinburgh, and subsequently was for a short time engaged in the practice of his profession in his native town, Arbroath. Soon afterwards he appears to have changed the plan of his life, and for the purpose of educating himself for the scientific career which he had resolved to adopt, he proceeded to the Continent. After spending several months, which were devoted to general culture, at Rome, Naples, and Florence, he resumed the study of anatomy at Pavia, under Panizza. The following years were spent partly in Edinburgh, partly in Paris, Vienna, Heidelberg, and Berlin. At Berlin he became the pupil and friend of Rudolphi, and by laborious anatomical studies laid the foundation of his future success and eminence. In 1831 he began to lecture in Edinburgh on anatomy, having his friend Prof. Allen Thomson as his associate; and in 1836 was invited by the Council of the University of London, now University College, to accept the Chair of Anatomy and Physiology, which he occupied until 1874.

It was about this time that he was most actively engaged in physiological investigation. His scientific writings, which were not numerous, have the characteristic excellences of accuracy of observation and soundness of judgment. One of his earliest contributions was on ciliary motion, and appeared in 1830. Others formed the subjects of articles in the "Cyclopædia of Anatomy and Physiology," while a still greater number were embodied in the successive editions of the "Elements of Anatomy." Notwithstanding the rapid progress of anatomical and physiological science during the past thirty years, none of Dr. Sharpey's observations have lost their value.

He was appointed Secretary of the Royal Society in 1854, shortly after important changes had taken place in its administration, in the bringing about of which he, with others whose names are not less distinguished, had taken part. The beneficial effect of these changes in extending the Society's influence for the advancement of natural science was due in great measure to the sagacity and energy with which he administered such of its affairs as fell within the scope of his duties—duties for which he was singularly fitted by the extent and variety of his learning, by the wisdom of his counsels, by the wide range of his scientific interests, by the candour and justice which guided him in appreciating other men's work, and by his ready sympathy with every true and honest worker.

Great as Dr. Sharpey's services to science were in his public capacities as Secretary of the Royal Society, as a Member of the Senate of the University, and of the Royal Commission on Science, and in other ways, these were perhaps not the most important. For years he was the greatest teacher of anatomy and physiology in this country, occupying a position side by side with Johannes Müller in Germany. Just as the influence of Johannes Müller's life and teaching is still powerful in that of his pupils, so we may confidently anticipate that Sharpey's work will follow him. Of the fellow-workers in his own field who are at this moment mourning his loss there is perhaps not one who does not directly or indirectly owe him that which has made him what he is; nor should we be far wrong if we were to add that those who are best endowed owe him most.

While the very sounds of our friend's voice are freshly

impressed on our ears, it is too soon to do more than attempt to trace the more marked features of his character. The qualities which chiefly distinguished him intellectually were the variety of his knowledge, the accuracy of his memory, which he retained to the last without appreciable impairment, and his sound discrimination in all matters of doubt or controversy. To his friends he was endeared by his habitual consideration for the welfare and interests of others, his unwillingness to think ill even of those of

whose conduct he disapproved, and his transparent truthfulness. When it is remembered how large was the circle of his acquaintance and the number of those who, during the thirty-eight years of his professorial life, came under his personal influence, we may well moderate our grief at parting with him by reflecting on the good that must have accrued from the life and labours of one in whom so vigorous an understanding was united with so genial and sympathetic a nature.

#### SIGNOR PERINI'S PLANETARIUM

IN NATURE, vol. xxi. p. 111, we described the ingenious planetarium recently invented by Signor Perini, and which has cost him seven years' constant labour. To-day

we are able to present an illustration of this invention, which may give those of our readers who have not seen the original, some idea of its construction. The visitors are supposed to be standing underneath the dome, from which



are suspended the sun and planets. Of course it has been necessary for purposes of illustration to greatly exaggerate the proportionate sizes of the planets, but our readers will see that for purposes of instruction Signor Perini's inven-

tion must be of the greatest possible utility. For details we must refer the readers to our previous article on the planetarium, which we believe is still standing and may be seen at 77, Newman Street, Oxford Street.