

and hear his explanation." Surely no such arrangement will satisfy "all the scientific men in the world." We contend that as Mr. Casella has publicly claimed the invention as his own, it ought to be decided with equal publicity whether he has done anything more than copy our instrument.

We again give the description of our thermometer (not in our own words, for we might be accused of shaping them to suit our purpose) but in the words of the late Admiral Fitzroy as they appear in the first number of *Meteorological Papers*, page 55, published July 5, 1857, in referring to the erroneous readings of all thermometers consequent on their delicate bulbs being compressed by the great pressure of the ocean, Admiral Fitzroy says:—

"With a view to obviate this failing, Messrs. Negretti and Zambra undertook to make a case for the weak bulbs which should transmit temperature but resist pressure. Accordingly, a tube of thick glass is sealed outside the delicate bulb between which and the casing is a space all round which is nearly filled with mercury. The small space not so filled is a vacuum into which the mercury can be expanded, or forced by heat or mechanical compression, without doing injury to, or even compressing the inner or much more delicate bulb," &c. &c.

Mr. Casella "did not wish to take up your valuable space to describe his thermometer." Well, it matters not; the late Admiral Fitzroy has done it for him. He described it sixteen years ago; and if the reader will take every syllable of the extract above quoted, and substitute the word "alcohol" for "mercury" (which colourable change was effected by Mr. Casella, to the detriment of the instrument), they will have a correct description of Mr. Casella's thermometer in the most minute details.

HY. NEGRETTI AND ZAMBRA

Rain-gauge at Sea

I BEG to send you a copy of a letter I received lately from Capt. Goodenough, of the Royal Navy, respecting the use of my rain-gauge at sea. (See *NATURE*, vol. vii. p. 202.)

Nov. 8

W. J. BLACK

"H.M.S. *Pearl*, lat. 6° S., long. 22 W.

"Dear Sir,—I should have taken an earlier opportunity of writing to you about the instrument which you were so good as to design for use on board ship, but have not had the good fortune to fall in with any rain up to the present time with which I could at all events in some measure test and chronicle the rain-gauge. It is odd that in a journey of twenty days I have had only '07 in. of rain, and that although I am at this moment in a district in which an average of seven hours' rain usually falls at this time of the year. On that one occasion '07 in. did fall and was duly caught in your instrument as well as in another mounted on gimbals, the measurements being exactly alike in each. I much prefer the mounting of your instrument, and will report to you as to the amount of weight it requires after some experimenting with it. The usually most steady instrument is one which is heavy, and whose centre of gravity is very near its centre of oscillation. I do not think it would be well to increase the size of the instrument, as it would become inconvenient to place, except for the use of a man who wishes to devote himself very much to that order of observation. Our poop is so high here that I do not anticipate any mixture of sea-spray in the gauge, but if it were so your table would be sufficient to clear it, supposing we had Carpenter's Hydrometer to test with, as we might not expect enough water to float an ordinary one.

"I remain, yours very truly,

"JAMES E. GOODENOUGH

"Captain R.N. Command H.M.S. *Pearl*, proceeding *via* the Cape to Australasia."

Glaciers

In a letter printed in your number for Oct. 16 (vol. viii. p. 506), Mr. J. H. Röhrs states that he believes that glaciers existed at or near the sea-level in central Hindustan in the glacial period. Glaciers undoubtedly existed in the Himalayas at a much lower elevation than at present; there are traces of their action in Sikkim in valleys, the bottoms of which are now only 4,000 ft. above the sea, and in the north-western Himalayas, Mr.

Medlicott, I think, considers that in some valleys, glaciers descended to within 1,000 ft. of the sea-level, but I have never heard of any marks of old glacial action in the Indian peninsula south of the Himalayas. There are no mountains in central Hindostan exceeding about 4,000 ft. in height, and a careful examination of the portions of the Nilgiri mountains in Southern India, which rise above 3,000 ft., has not afforded any proof of the former presence of ice. It is very probable that Mr. Röhrs possesses information upon this subject with which I am unacquainted, and it is without the least wish to express a doubt of the accuracy of his information, that I ask for any evidence he can produce in favour of his assertion, as the subject is one in which I am greatly interested.

W. T. BLANFORD

JOHANN NEPOMUK CZERMAK

JOHANN NEPOMUK CZERMAK was born June 17, 1828, in Prague. His father, Johann Conrad Czermak, was a medical practitioner of high repute in that city, and his uncle, Joseph Julius Czermak, enjoyed a considerable reputation as Professor of Medicine and Physiology, first at Gratz and afterwards at Vienna. Educated at the high school of his native town, Johann Czermak entered upon the study of medicine at the University of Vienna in 1845. In 1847 he moved to Breslau, where he had the great advantage of living with the distinguished physiologist Purkinje. From Breslau he passed on in 1849 to Würzburg, where in 1850 he received the degree of M.D., publishing on that occasion an inaugural dissertation on "The Microscopical Anatomy of the Teeth," in which he called attention to the larger "interglobular" spaces so often found in the upper part of the dentine. After a visit to England he settled at Prague, where he became assistant to Purkinje, who then held the chair of Physiology in that place. In 1855 he left Prague to take the chair of Zoology at Gratz; but zoology was not his proper province, and he gladly accepted in 1856 the offer of the Professorship of Physiology at Krakau, which however he left in the following year for the like chair in Pesth. In both these universities he established physiological laboratories and gave a decided impulse to physiological research; but the political agitations then rife made life distasteful to him there, and in 1860 he resigned his chair and returned to Prague. Such frequent changes must have interfered greatly with sustained research, but by this time Czermak had made his name known as well by several investigations in experimental physiology and in subjective vision, as especially by his researches on the laryngoscope, his treatise on which ("Der Kehlkopfspiegel und seine Verwerthung") embodying the results made known in various papers in 1858 and 1859, he published shortly before his return to Prague.

Here he resided some years, visiting at times England, Holland, and France, in order to make the value of the laryngoscope better known to his fellow-workers in science and medicine. There are many in England who retain pleasant memories of these visits.

The ample means brought to him by the gifted lady whom he had the happiness to marry, enabled him to build in Prague and furnish at his own expense a private laboratory for research, in which he not only worked himself, but which he also placed at the disposal of others. Many would have envied, and few would willingly have let slip, such an opportunity for quiet labour; but Czermak, conscious of the power he possessed of lucid exposition, delighted in teaching, and felt perhaps the want of the stimulus which pupils afford. Accordingly, when in 1865 he was offered the chair of Physiology in Jena, vacated by the removal of von Bezdold to Würzburg, he at once accepted it. Here he continued until, in 1869, finding the disease to which he eventually succumbed (and the beginning of which he himself attributed to the irritation caused by the