This interesting and instructive case will doubtless inaugurate a new era in medical practice; for, although this particular individual has succumbed to measures adopted to avert his otherwise certain death, the experience thereby gained is sufficient to encourage further efforts in a similar direction, which may prove beneficial to others. In the Marshall Hall oration of last year, Professor Ferrier remarked, "There are already signs that we are within measurable distance of the successful treatment, by surgery, of some of the most distressing and otherwise hopeless forms of intercranial disease, which will vie with the splendid achievements of abdominal surgery." He further added, reflecting on the success which had attended brain operations on animals, "I can but believe that similar results are capable of being achieved on man himself." That distinguished physiologist can but feel gratified that his prophetic words have been partially realized.

DISCOVERY OF SILURIAN INSECTS.

SOME weeks since, we noticed the discovery by Lindström of a Silurian scorpion, Palaeophoneus nuncius, — the earliest-known air-breathing animal. To-day we reproduce in natural size a photograph of it received from Dr. Lindström. How quickly one discovery leads to another, is evinced by the curious fact that we now learn of the discovery by Dr. Hunter of another scorpion of the same genus in the Ludlow beds of Scotland, which are also referred to

PALAEOPHONEUS NUNCIUS.

the upper Silurian. This second specimen, fortunately, is preserved so as to show the stigmata and 'comb' of the ventral surface, and will therefore offer more evidence as to its exact zoölogical position. It is in the hands of Mr. Peach of the geological survey, who described the carboniferous scorpions of Scotland with such care. Even this curious discovery is eclipsed by the announcement, at the last meeting of the French academy in 1884, of the finding of an insect's wing in the middle Silurian of Calvados, which Mr. Charles Brongniart, who announces the discovery, refers to a cockroach. It presents certain peculiarities, and among others an unusually long and straight anal vein. It is named Palaeoblattina Douvillei, after its discoverer. The oldest-known winged insects, up to this time, had been the Devonian insects of New Brunswick.

METEOROLOGICAL NOTES.

THE Colorado meteorological association, recently formed, proposes to establish stations for observation at twenty or more points in Colorado, and has applied to the legislature for assistance.

In co-operation with the chief signal-officer, U.S. army, arrangements have been completed with the Old colony railroad, whereby 'cold-wave' flags — white, with a black square in the centre — will be displayed at eleven of the most important stations on the road, on receipt of telegraphic orders from Washington. The stations are Boston, Quincy, South Braintree, Brockton, Middleborough, Taunton, Somerset, Fall River, Newport, New Bedford, and Plymouth. An extension of this arrangement is in contemplation, so as to bring the daily weather forecasts issued by the signal-office into even more general notice than they gain by publication in the daily papers. Postmasters or town authorities in New England, desirous of undertaking the display of daily weather signals, are requested to address Mr. W. M. Davis, Cambridge, Mass.

Investigations upon the subject of ozone and the relation of its presence or absence to epidemic diseases are now carried on in various sections of the country. If sufficient encouragement is given, it is probable that observations will be undertaken by the New-England meteorological society, under the supervision of Dr. E. U. Jones of Taunton, Mass. Physicians and others who would be willing to engage in these observations are requested to address Dr. Jones. The cost will be about three dollars annually for each observer.

On the morning of Dec. 27, when the wind was everywhere light, the temperature at the summit of Mount Washington was +16°, while at stations at lower levels, north of the Massachusetts boundary, the temperatures ranged from —10° to —24°. A more striking instance of the disturbance of the usual law of decrease of temperature with increase of altitude is rarely noted.

In his 'Meteorological summary' for the year 1884, Prof. F. H. Snow states that the most notable features of the year 1884, in Kansas, were the low mean temperatures of the spring, summer, and win-

ter months; the high mean temperature of the autumn months; the very large rainfall, which came within half an inch of the extraordinary precipitation of the year 1876; the unusual percentage of cloudiness; the low velocity of the wind; the decided preponderance of south winds over north winds; and the increased percentage of atmospheric humidity.

The master of the steamship British King, from Swansea, reports, Jan. 15, in latitude 41° north, longitude 67° 10′ west, encountering an electric storm which lasted about four hours. The weather had been overcast with heavy rain from noon until six P.M., when the wind shifted from south-west to west, followed by loud claps of thunder and vivid flashes of lightning. At the same time large balls of 'St. Elmo's fire' were seen on all the yard-arms and mast-heads. All of the stays and back-stays were covered with sparks of fire of a bluish tint.

Professor Kiessling of Hamburg has issued a circular in the name of the Hamburg-Altona branch of the German meteorological society, asking practised observers, accustomed to noting the appearance of the sky, for reports on the colors still visible in the neighborhood of the sun in clear weather, as well as for records of the dates on which these peculiar displays first became visible. He regards them as sequels to the extraordinary twilights of 1883, and considers all these optical effects as results of the Krakatoa eruption. The phenomena on which observations are especially desired are the vaguely defined, smoky, reddish ring enclosing a brilliant whitish disk around the sun; and the pale red tint that has been seen between clouds at a greater distance from the sun, while the solar disk itself was hidden. Observations from distant, out-of-the-way stations are particularly valuable; and the records of mountain observatories are of greater interest than those of lower levels, as the solar diffraction ring is much more distinct when seen in the relatively clean upper air than when viewed through the dust-laden strata of the lower atmosphere. Professor Kiessling has published valuable papers on the optical theory of the brown-red ring in the *Naturforscher* and in *Das wetter*.

In his report on the New-Hampshire state triangulation in 1884, Prof. E. T. Quimby says, "It may be proper to mention that while the 'red sunsets' have not been so marked as they were a year ago, the Krakatoa dust has been constantly and plainly visible from sunrise to sunset every day when the sky has been free from clouds. There has been no day when the sky has had its normal blue."

THE CHEMISTRY AND PHYSICS OF THE SEA.

Forchhammer showed in 1864, by his analysis of several hundred samples of sea-water, that, though the water of the ocean may vary greatly in degree of dilution, the composition of the saline matter in solution is, for surface-waters, and so far as concerns the chlorides and sulphates of sodium, magnesium, and calcium, — the principal components, — constant within the limits of error of his work. Besides these more important constituents, other substances to the number of twenty-four elements are known to occur, but in their entire sum amount to but a small fraction of one per cent of the total saline matter.

In part i. of the volume before us, Professor William Dittmar gives his researches into the composition of ocean-waters collected by the Challenger. Seventy-seven samples, representing different stations upon the ocean, and various depths beneath the surface, yielded figures, which, agreeing fairly well with those of Forchhammer, and better still among themselves, seem to warrant the conclusion that the composition of the salts in sea-water is independent of the latitude and longitude of the station from which the water is taken, and of depth also, so far as concerns the chlorine, sulphuric acid, magnesia, potash, soda, and bromine. The proportion of lime, however, increases with the depth of the water. The following table contains Professor Dittmar's figures for the mean composition of the salts in sea-water, in comparison with those of Forchhammer: —

	Per hundred parts of total salts.	Per hundred of halogen calculated as chlorine.	
	Dittmar.	Dittmar.	Forchhammer.
Chlorine	55.2920	99.8480	Not determined.
Bromine	0.1884	0.3402	Not determined.
Sulphuric acid (SO_3)	6.4100	11.5760	11.88
Carbonic acid (CO_2)	0.1520	0.2742	Not determined.
Lime (CaO)	1.6760	3.0260	2.93
Magnesia (MgO)	6.2090	11.2120	11.03
Potash (K_2O)	1.3320	2.4050	1.93
Soda (Na_2O)	41.2340	74.4620	Not determined.
(Basic oxygen, equivalent to halogens)	(−12.4930)	–	–
Total salts	100.0000	180.5840	181.10

Or, combining acids and bases arbitrarily,

Chloride of sodium	77.758
Chloride of magnesium	10.878
Sulphate of magnesium	4.737
Sulphate of lime	3.600
Sulphate of potash	2.465
Bromide of magnesium	0.217
Carbonate of lime	0.345
Total salts	100.000

The difference between surface and intermediate waters in the contents of lime was 0.0125

Report of the scientific results of the voyage of H. M. S. Challenger during the years 1873-76. Physics and chemistry. Vol. i. London, *Government*, 1884. 307 p., 278 pl., map. 4°.