

We are probably yet a long way from any simple method, suited for general adoption, for observing the *true temperature of the air* at any place by means of the thermometer, so as to eliminate completely the disturbing influence of radiation as regards the thermometer and its protecting screen, or box. This is a problem which may well engage the serious attention of the chief observatories of this and other countries for some years to come. The inquiry may be conducted by ascertaining the true temperature of the air at different hours and seasons by Joule's method, described in a communication to the Philosophical Society of Manchester, November 26, 1867, and comparing the results with those simultaneously obtained by thermometers protected in boxes of different constructions and materials. On this point Wild's paper contains some very valuable observations—valuable, not because they are conclusive, but because they are suggestive, as indicating the line of inquiry which should be pursued. In the meantime all that can be secured is *uniformity*, which would be sooner attained if meteorologists recognised that the following positions of the thermometer are, on physical grounds, inadmissible in researches into the horary fluctuations of the temperature and humidity of the air, viz. the roofs of houses, close or near to walls, over bare soil, in the shadows of trees, walls, or other obstructions, or outside windows. Let it be recognised that observations made under these conditions are of less, and in most cases of no value, then the adoption of 4 ft. as the standard height would follow, and with it the question of uniformity would be almost, if not altogether, settled.

As regards *rain-gauges*, the Congress adopted as the best form for the receiver of the rain-gauge the circular one, with a diameter of 14 in., and at a height of 3 ft., or better 4½ ft., above the ground, a decision which was agreed to by all the delegates except Mr. Buchan, who lodged his protest against it. We have taken the trouble of looking over Mr. Symons' last published *British Rainfall*, and observe that there are not more than half a dozen gauges in the British Isles of this dimension. The readers of NATURE are no doubt aware of the extensive experiments and observations made on this subject in England for some years past, and published annually in the *British Rainfall*, from which it has been experimentally proved that gauges of all sizes from 3 in. to 24 in. inclusive collect amounts not differing more than 2 per cent. from each other. We have had a communication from Mr. Scott, by which we are glad to learn that the Meteorological Office has resolved to retain at its stations the 8 in. gauges hitherto in use. This decision as to the size of the gauge a future Congress will no doubt rescind. Equally in error is the decision as regards height of gauge above the ground, especially large gauges. It is certain from numerous observations made on the subject, that gauges placed at from 3 ft. to 4½ ft. above the ground will not indicate with sufficient correctness the amount of the rain which falls at the place of observation in cases where wind accompanies the rain, owing to the disturbance caused by the obstruction offered by the gauge itself, and by the eddies generated within the funnel. Now owing to the enormous dragging influence of the earth's surface of the wind, these disturbing effects are reduced several fold at the surface and at one foot above it as compared with 3 to 4½ ft. high. On these grounds we cannot recommend British Meteorologists to follow the decision of the Congress. Owing to the extreme variableness of the rainfall, particularly in such countries as Great Britain, where the surface is so uneven, the proper observation of the rainfall requires twenty times more observers than are required to observe any of the other meteorological elements. It is therefore well that a cheap gauge is also a good one, since it facilitates an adequate observation, through numerous observers, of the rainfall, which from its practical and scientific bearings it is so important to know.

In fixing the hours of observation it is essential that those hours be selected which give approximately the mean temperature of the day. The combination of hours which seems to have been most approved both at the Leipzig Conference and the Vienna Congress, and referred to by some very able meteorologists as unconditionally the best, is 6 A.M., 2 P.M. and 10 P.M. The merits of this combination consist in the equal interval of eight hours between the observations, in the close approximation to the daily mean temperature it affords, and in its suitability for tri-daily charting of the weather. It is, however, a combination of hours which, since it all but absolutely excludes the hours of occurrence of the daily thermometric, barometric, and hygrometric extremes and means, cannot be recommended as generally suitable for meteorological observations of all countries.

Indeed, its adoption in tropical and sub-tropical countries would be a blunder. As generally suitable for all latitudes, and for the observation of the principal daily atmospheric phases of temperature, pressure, &c., the best hours are 9 A.M. 3 P.M. 9 P.M., or 10 A.M. 4 P.M. 10 P.M., it being assumed that self-registering thermometers are also used.

We are glad to see that it has been proposed to convene another Meteorological Congress in three years, and hope that some of the questions that form the life-blood of the science will be seriously and adequately discussed by the members of that Congress. The more important of these questions are:—(1) The position and protection of the thermometer for the temperature of the air; (2) A more satisfactory method for observing the humidity of the air, and of making the deductions therefrom; (3) The observation of earth-temperatures, especially at and near the surface, and the depth at which fixed thermometers cease to be suitable; (4) Solar and terrestrial radiation; (5) The examination of the drying qualities of the air by anemometers, so as to secure comparable results; (6) A statement of the conditions which anemometrical stations ought to fulfil, so that the instrument shall indicate the true movement of the air over the region where it is placed, or, if this be unattainable, a means of valuing the observations so as to approximate to it; * (7) Anemometers (Wild's, &c.) for stations of the second order, with which trustworthy observations of wind-force may be made; and anemometers of velocity which admit of their errors being readily ascertained from time to time; (8) An adequate nomenclature of clouds; and (9) the question of atmospheric electricity.

Though the Vienna Congress can properly be regarded as having only concerned itself with questions lying on the outskirts of meteorology, it has done commendable work in thus paving the way for future Congresses, entering on the really important practical questions which united action on the part of meteorologists can alone settle. Until tolerable uniformity be arrived at as regards (1), (2), (5), (6), (7), and (8), in the above paragraph, meteorologists can scarcely be said to have begun to collect data of such a nature as will satisfy our best physicists, and thus lead them to undertake the investigation of the more important of the intricate and difficult problems of the science.

M. COGGIA'S COMET

THE following is an ephemeris to the comet discovered by M. Coggia. It will be seen that the comet will be vastly increased in brilliancy by the month of August.

Berlin Mean time.	R.A.	D.	Brightness (brightness at time of discovery = 1).
	h. m.		
May 19.5	6 30.9	+ 68 49.4	
28.5	54.34	53.7	
27.5	39.49	59.8	
31.5	45.55	+ 69 3.4	
June 4.5	52.57	19.2	3.8
8.5	7 0.57	31.6	4.5
12.5	10.0	45.1	5.5
16.5	20.17	58.1	6.7
20.5	31.57	+ 70 9.3	8.4
24.5	45.8	16.3	10.6
28.5	59.59	15.2	13.6
July 2.5	8 16.36	0.7	17.8
10.5	50.47	+ 68 15.0	32.3
18.5	9 35.50	+ 62 45.2	64.8
26.5	10 8.57	+ 47 10.9	146.3
Aug. 3.5	21.30	+ 8 52.7	245.0
11.5	10.55	+ 28 17.2	130.8

SOCIETIES AND ACADEMIES

LONDON

Royal Society, May 7.—Note on some Winter Thermometric Observations in the Alps, by E. Frankland, F.R.S.

During the past winter the author spent a fortnight at the village of Davos, Canton Gränbünden, Switzerland, and had thus an opportunity of experiencing some of the remarkable peculiarities of the climate of the elevated valley (the Prättigau) in which Davos is situated. The village has of late acquired considerable repute as a climatic sanitarium for persons suffering from diseases of the chest.

* NATURE, vol. viii. p. 342.