whole of the precipitation takes place during the summer months. Heavy falls at the beginning or end of the year would entirely throw the calculation out, as was shown by Mr. Watt in the issue of April 14. In countries such as England and Scotland, where the rain is fairly evenly distributed throughout the year, the centre of gravity, as determined by Mr. Cook, will nearly always lie between 6 and 7, although its true position may be anywhere from 0 to 12.

If the monthly rainfalls be plotted round a disc arranged like a clock-face, and then the moments be calculated about rectangular axes passing through the centre of the disc, a series of simple calculations gives the true position of the centre of gravity.

It is best defined by means of an angle, α, measured clockwise from XII, and a distance, a, expressed as a fraction of the radius. The latter is a measure of the unevenness of the distribution of the rainfall. If equally distributed throughout the year, $a=0$; if very unequally distributed, a approaches 1. If the angle α be divided by 30°, a figure is obtained corresponding to Mr. Cook's C.G. But as the true position of the monthly rainfall is at the middle and not the end of the month, 0·5 must be deducted from this figure to obtain D, the date in months corresponding to the true centre of gravity. Mr. Cook omitted to make this correction.

In the tables below this method has been applied to two stations in southern India, selected at random:—

Bangalore.

Month	Mean rainfall inches	Moment about horizontal axis	Moment about vertical axis	Moment by Cook's method
I	0·06	0·05	0·03	0·06
II	0·22	0·11	0·19	0·44
III	0·72	0	0·72	2·16
IV	1·19	−0·60	1·03	4·76
V	4·53	−3·92	2·26	22·65
VI	3·13	−3·13	0	18·78
VII	4·13	−3·58	−2·06	28·91
VIII	6·00	−3·00	−5·20	48·00
IX	7·11	0	−7·11	63·99
X	6·74	3·37	−5·84	67·74
XI	2·61	2.26	−1·30	28·71
XII	0·39	0·39	0	4·68
Year	36·83	−8·05	−17·28	290·88
a		0·513		
α		245°		
D		7·67 (August 20)		
"C.G."				7·90
"C.G." corrected				7·40

Kolar.

Month	Mean rainfall inches	Moment about horizontal axis	Moment about vertical axis	Moment by Cook's method
I	0·16	0·14	0·08	0·16
II	0·04	0·02	0·04	0·08
III	0·50	0	0·50	1·50
IV	1·32	−0·66	1·15	5·28
V	3·34	−2·90	1·67	16·70
VI	3·13	−3·13	0	18·78
VII	3·36	−2·91	−1·68	23·52
VIII	4·16	−2·08	−3·61	33·28
IX	5·10	0	−5·10	45·90
X	5·50	2·75	−4·77	55·00
XI	3·17	2·75	−1·58	34·87
XII	0·81	0·81	0	9·72
Year	30·59	−5·21	−13·30	244·79
a		0·467		
α		248°		
D		7·78 (August 23)		
"C.G."				8·00
"C.G." corrected				7·50

It will be seen that the results are not very different from those obtained by Mr. Cook's method, and the difference is constant, at any rate for these two stations (0·28, 0·27). But for English stations very different results would be obtained. The constants have also been calculated for the three imaginary cases suggested by Mr. Watt:—

	A in.	B in.	C in.
I	3	0	12
II	3	0	4
III	3	0	2
IV	3	6	0
V	3	6	0
VI	3	6	0
VII	3	6	0
VIII	3	6	0
IX	3	6	0
X	3	0	2
XI	3	0	4
XII	3	0	12
Year	36	36	36
"C.G."	6·5	6·5	6·5
D	—	6·0	0
a	0	0·644	0·830

It will be seen that D and a, together with the total rainfall for the year, entirely define the distribution, whereas the "C.G." calculated by Mr. Cook's method throws no light upon it.

This method of specific gravities can, of course, be used for other annual statistics, such as barometric pressures and temperatures. In the latter case, the figures for a would depend upon the zero of temperature selected, and would consequently be different for the Centigrade and Fahrenheit scales. It would perhaps be more satisfactory to take the mean annual temperature of the station as zero. The figures for D would not be affected by the choice of scale.

The applicability of the method is not confined to meteorology, but may be used for any phenomenon which varies with the time of the year, *e.g.* vital statistics or railway receipts. A. MARSHALL.

Waverley Cottage, Naini Tal, India, June 14.

Present Meteoric Displays.

THE Perseid shower appears to have come into play rather earlier than usual this year, for I saw four meteors presumably directed from it on the nights of July 11 to 13. These meteors were of the usual streaking class, and formed a radiant at about 16°+50°, which agrees fairly well with the correct place of radiation at the end of the second week in July. This year I found meteors decidedly rare at the epoch named, but the skies were not very favourable, and twilight very strong.

By the time these lines appear in print the moon will only slightly interfere with observation, and a clear sky will show many meteors, for at the end of July the Aquarids, as well as Perseids, are generally plentiful; and there is no danger of confusing the members of the two streams, since their radiants are widely distant from each other. The Aquarids shoot slowly upwards in long flights from a radiant low in the southern sky, while the Perseids are directed in rapid courses from a radiant in the N.N.E.

On July 29–31 an observer may generally expect to see at least twenty meteors per hour, and especially after midnight, when the number visible usually exhibits a very marked increase, the radiants of both the Perseids and Aquarids taking up a more favourable position for the distribution of their meteors as the night advances.

It is to be hoped that all the brighter meteors and bolides will be individually recorded this year. The stars of Draco, Cassiopeia, Cepheus, Andromeda, Pegasus, Cygnus, and other constellations afford a ready guide for the accurate registry of meteor-flights, and such data will possess an enduring value as a means of furthering our knowledge. W. F. DENNING.

Pwdre Ser.

THE following letter, which I received last winter, may possibly throw some light on the questions raised by Prof. Hughes in his paper on "Pwdre Ser" in NATURE of June 23:—

"*Allegheny, December* 4, 1909.

"DEAR PROFESSOR SCHLESINGER,—

"Referring to the falling meteor of which my husband made mention at your lecture last evening, the facts are