connected with the presence or absence of those valuable, if scanty, rains which drop from the upper southwest current more or less every year in northern India in the winter months—between November and March—when the northeast monsoon (so called) prevails near the surface.

The relation between the pressure anomaly curve and the winter rains is, curiously enough, precisely the reverse of that which obtains during the summer monsoon, a rising curve being associated with heavy and a falling curve with light rains.

It would be unnecessary to enter into the reason for this, which is fairly obvious to the student of Indian meteorology. Empirical though it is at present, the fact is exceedingly valuable in relation to the prevision of the highly important winter rains and rabi crop of northern India, upon the success or failure of which the question of famine in that area so often hinges.

Apart from these six monthly barometric waves, there is little doubt that certain influences are at work in the atmospheric circulation over the Indian area which cooperate with other periodic factors in tending to cause excess or defect of rains at intervals of from 9 to 12 years. What these influences exactly are it is difficult to say. To some extent they appear to be associated, as we have above noticed, with the eleven year period of sun spots; and certain irregularities in the parallelism of the two phenomena are, in my opinion, no argument against their covariancy and even causal connection, since the northern and southern Indian areas are at some seasons meteorologically distinct. So far as the facts go they may be summarized as follows:

1. Extensive droughts occur in the dry area of southern India, embracing in particular northern Mysore, south Deccan, southwest Hyderabad, but occasionally reaching Guzerat and parts of the Bombay and Madras presidencies, at intervals of nine to twelve years and usually, but not regularly, about a year before the sun spot minimum. When the conditions are sufficiently acute, famine occurs in the ensuing year.

2. A severe drought in the peninsula of southern India is followed by a severe drought and ensuing famine in northern India in about 5 cases out of 7.

This sequence is attributed by Mr. Eliot to the empirical law of opposition in the seasonal rainfalls of northern India and the general monsoon conditions of northern and southern India.

Thus a drought and high barometric pressure in southern India usually coincides with low pressure and heavy summer monsoon in northern India. This latter tends to be followed by a heavy winter rainfall, and this again by the compensatory law, first discovered by Professor Hill and the writer in 1877, by subsequent deficient summer rainfall in northern India.

3. Besides these, summer droughts tend to occur in northern India alone in years of maximum sun spots, connected in some way with the abnormal high pressure over western Asia which prevails at such epochs.

There is thus a double periodicity of drought and famine in North India and a single periodicity in South India in the sun spot cycle, though the relation between the phenomena is too spasmodic and irregular to be utilized as a reliable factor for prevision.

Brückner's empirical cycle of thirty-five years, whatever its cause, undoubtedly exists in the Indian area. Under the title of the "grand cycle" it has long been known in Ceylon, and it is quite possible that the present famine, which, from its area and the immense number (6,000,000) of people who are still on relief works, appears to be the greatest famine of which we have any record, may be the aggregate effect of the simultaneous occurrence of a Brückner with a sun spot cycle drought.

The problem is similar to that of the combinations of harmonic undulations which cause unusual tides, and its solution and application to prevision can only be effected by systematic study of the billows and ripples which appear in the long and short records of barometric pressure over wide areas and for many years.

NOTES BY THE EDITOR.

METEOROLOGICAL CABLEGRAMS.

For many years past the astronomical world has agreed upon a special cipher code for use in transmitting to all parts of the world cablegrams announcing such astronomical discoveries as need to be immediately made known. Thus a comet, or asteroid, discovered by some careful searcher among the myriad of stars is immediately brought to the attention of many industrious observers and is sure of being carefully watched from that time forward.

There are occasions when meteorologists and physicists need to interchange similar scientific despatches. For many years past the Weather Bureau has sent a daily cablegram to the Central Meteorological Bureau of France summarizing the conditions on this side of the Atlantic. Doubtless, many occasions may arise in which a short despatch would be very useful to others also. In order to facilitate this international exchange of telegrams, each bureau should have its own cable address and, if possible, one uniform system of cipher code should be introduced. All such addresses and codes should be registered and published in "The Atlantic Cable Directory of Registered Addresses and Code Book containing an alphabetical List of Names, Arranged by Cities and States together with a classified Business Directory, Telegraph and Cable Code, compiled by Chas. P. Bruch, Assistant Secretary of the Postal Telegraph Cable Company; a practical and useful general code, United States and Canada Section, for circulation throughout the world; subscription price, in United States, $12.50; published by Atlantic Cable Directory and Code Company, New York and London."

The official vocabulary of code words compiled by the International Code Office at Bern, Switzerland, probably offers the best basis for an international meteorological code, but the directory code compiled by Mr. Bruch and published in his volume is a selection from the preceding and especially adapted to English and American usage. The registered cable address for official communications to the Chief of the Weather Bureau is simply "Weather," and that for the Editor of the MONTHLY WEATHER REVIEW is "Cleveabbe." Nothing more in the way of address is needed, as such telegrams come direct to the Weather Bureau. Inasmuch as considerable saving of expense is effected by the use of such registered addresses, the Editor will take pleasure in publishing in the MONTHLY WEATHER REVIEW the similar cable addresses for such other meteorologists or meteorological services as may become known to him.

Since writing the above the French Association for the Advancement of Sciences has announced that the Secretary has adopted "Afas" as its telegraphic and cable address, with the added caution that this is not to be used for important written documents, or as the mail address.