

October 12 (standardisation period)=84.8. On nine out of thirty-five observations during this period the corrected percentage was below 90.

Lowest corrected percentage during two blank experiments, each lasting twelve days=89.1. On one out of twenty observations during these two periods of blank experiment the corrected percentage leak was below 90.

Lowest corrected percentage during period November 7-17, after two days' proximity of the aluminium plate to pitchblende=81.9. On ten out of eleven observations during this first period of true experiment the corrected percentage was below 90.

Lowest corrected percentage during the period November 21 to December 24, after a two days' re-approximation to pitchblende=79.5. On thirty-one out of thirty-five observations during this second period of true experiment the corrected percentage leak was below 90.

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Atmospheric See-Saw Phenomenon and the Occurrence of Typhoon Storms.

IN January last there was a very noteworthy barometric change agreeing in a high degree with the results of those synodal pressure periods which have been affirmed for European latitudes by the statistical investigations of two German meteorologists, Captain K. Seemann and Dr. G. Meyer. These results require high pressure at the time of the first quarter and low pressure at the time of the full moon, especially in the months from September to January. Last January was also in a synodal respect marked by its elliptical character; so it agrees accurately with those requirements, the first date (January 21) nearly coinciding with a record of high pressure in northern, central, and eastern Europe, and the latter date (January 29) with a decidedly low pressure. The conditions on the following first quarter (February 20) were completely reversed, for on this date there was a remarkable record of low pressure in the above parts of the earth-atmosphere.

This direct reversal of the pressure conditions of January was sufficient to excite the suspicion of a kind of see-saw phenomenon. This suspicion has been confirmed by a synoptic investigation of the barometric conditions over the whole earth, so far as information is at present available. The isobar of 760 mm. surrounded on February 20 the greater parts of Europe, the North Atlantic, and North America. The whole area contains more than 50,000,000 square km., nearly one-tenth of the whole surface of the earth; but it soon became possible to prove that an area of very high pressure also existed on February 20. This area had its centre over Transbaikalia. The weather report of St. Petersburg records on that day barometric observations from Chita of 789.8 mm., from Nerchinsk of 785.0 mm., and from Irkutsk of 783.4 mm. In Chita and Nerchinsk the barometer was ascending from February 19 to February 20. It is possible, too, that those tabulated barometric readings were too low. In the same reports the maps of January 22-23 show areas of more than 800 mm.; but in the tables the readings of all stations, including the stations situated in those areas, are below 800 mm.

This record day of high pressure, examined in the same manner, shows a much more widely spread area of pressure over 760 mm. than the area in which the readings of February 20 were under 760 mm. The high-pressure area of January 23 seems to contain nearly the whole of Europe, the greater parts of Asia and America, the Northern Atlantic, the Chinese and Indian Seas. Mostly below 760 mm. apparently were the continents of Australia and Africa and south-western Asia. The whole area of high pressure contained about 157,000,000 square km., nearly one-third of the surface of the earth.

To the east of the Japanese islands, from Formosa to Yeso, there were some depressions below 760 mm. and 763 mm. which had shown on the previous days more or less a typhoon character. Zikawei recorded on January 23 an area below 724 mm. between 22° and 30° N. lat. and east of 140° E. long. The very lowest

barometric reading of the same day is recorded—so far as there is information—in South Argentina, C. Virgenes in N.E. Tierra del Fuego showing a pressure below 750 mm.

The atmospheric conditions prevailing on January 23 over the N.W. Pacific point to a possible connection of the pan-atmospheric see-saw phenomenon with typhoon storms. Indeed, the extreme depressions of these storms seem able to exercise an influence on the common atmospheric situation. Further, the most frequented typhoon areas nearly coincide geographically with the two areas of contrary see-saw, as these areas are ascertained by my method of qualitative analysis of some barometric diagrams. The two areas are the Indo-Australian and the Central American regions.

I feel bound to publish these preliminary notes first in an English journal, because my researches in the main were made possible by the materials which the Meteorological Office in London liberally placed at my disposal.

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Early Reference to Red-light Treatment of Small-pox.

THE use of blue light as an anæsthetic and red light to prevent marking from small-pox has aroused some interest within recent times. The subjoined extract is from a footnote in Miss Strickland's history of Queen Marguerite of France, and was first published in 1839. According to this quotation from Gaddesden, the red-light treatment would seem to have been known in the days of Edward the First.

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WHILE music and sculpture had attained some degree of perfection in England at this time, other arts and sciences were in a strange state of barbarous ignorance. The earliest notice of medical practice is to be found, at this era, in the Latin work of Gaddesden, physician at the court of Queen Marguerite. This learned doctor, describing his treatment of Prince Edward in the small-pox, thus declares his mode of practice:—"I ordered the prince to be enveloped in scarlet cloth, and that his bed and all the furniture of his chamber should be of a bright red colour; which practice not only cured him, but prevented his being marked." More by good luck than good management; assuredly, it may be supposed that Gaddesden wished to stare the red inflammation of the small-pox out of countenance, by his glare of scarlet reflections! He adds in his *Rosa Anglorum* that "he treated the sons of the noblest houses in England with the red system, and made good cures of all." In this childish state was the noble art of healing at the court of Marguerite.

The Lyrid Meteors.

THERE are other nights besides the usual ones of April 20-22 on which it is desirable that a watch should be maintained for these meteors, and in the present year there are three dates that call for special attention in this respect, viz. those of April 14, 18, and 23, as from calculations made by the present writer showers become due on these nights, though it will not be possible, owing to the hours of their occurrence, to observe them all from the same station. Probably, so far as direct observation is concerned, the general Lyrid maximum will fall on the night of April 23, as its special periods of activity will favour more observers than in the case of the other two displays.

The following are the computed times of the various maxima of the anticipated showers:—

April 14, 7h. and 9h. 30m. G.M.T.

April 18, 3h. 30m. and 7h. G.M.T.

April 23, 8h. 30m. and 14h. G.M.T.

The moon will hinder observations most on the night of April 23, but if this night turns out clear, some fine meteors will probably be observed.

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