

OCEAN WEATHER REPORTS AND FORECASTS FOR AVIATORS.

The Times announces over the signature of Admiral J. F. Parry, hydrographer of the navy, that in view of the extent to which aircraft will have to rely for information as to weather conditions upon data from ships at sea, the Admiralty have issued a notice to mariners making arrangements for a new and comprehensive scheme. This involves the collection by wireless of meteorological data from ships in all parts of the world and at the same time the organization of free transmission of weather bulletins from a sufficient number of wireless stations to admit of ships being constantly supplied with reliable weather reports and forecasts wherever they may be.

Six or eight observation stations are being established in the northeastern Atlantic and ships are asked to supply to them information regularly at 1 a. m., 7 a. m. and 1 p. m. (Greenwich meridian time) each day, besides sending additional messages when required to do so from areas in which peculiar conditions obtain. All ships fitted with the necessary apparatus will be called upon to assist, but on receipt of an intimation that another ship in the vicinity is reporting no message will be sent. This avoids not only duplication, but interference, a very necessary precaution with wireless telegrams. The technical difficulties of securing priority of transmission are considerable, but they can be overcome by cooperation. Should it prove impossible to decipher long-range telegrams, international "silent periods" might possibly have to be resorted to, but it is hoped that this may be avoided. Earnest endeavors are being made to secure international agreement in the matter of codes, signals, times, and methods in general.

The organization which has been undertaken by the Meteorological Office involves the collection of observations by code messages, at Valencia and Malin. The data will then be transmitted to London by wireless for coordination. Wireless bulletins will be issued, and may include either a weather report, that is an official statement of existing conditions in some particular area, or a weather forecast of the probable weather conditions, or both. A list is given of 42 wireless transmission stations in all parts of the world from which bulletins will be issued regularly. There are in addition certain other stations which will be available for the supply of information on demand. The British stations proposed are Poldhu, in Cornwall, and Cleethorpes, in Lincolnshire, both of which will shortly be ready for the purpose.

Quite apart from the enormous advance in the economic utilization of modern weather forecasting, the scheme holds almost boundless possibilities for the development of scientific meteorology, and we look forward with the highest hopes to the fruition of so important a scheme of co-operative effort.—*Synons's Metl. Mag., London, May, 1919, p. 38.*

NEW WORLD'S AIRPLANE ALTITUDE RECORD.

Sublieutenant Cazale, of the French Air Service, who established on June 7 a new world's altitude record by reaching an altitude of 9,500 meters (31,160 feet), broke his own record on June 14 by climbing 10,100 meters (33,136 feet) in 55 minutes. Roland Rohlfs, on July 30, 1919, at Roosevelt Field, L. I., reached an altitude of 30,700 feet [9,357 meters], finding there a temperature of -25° F. and a wind of 100 mi/hr.—*Ariation and Aeronautical Engineering, July 1 and Aug. 15, 1919, pp. 594 and 84.*

Cazale's record closely approaches the highest ascents of men in balloons. In 1901, Berson and Stüring reached a known height of 10,500 meters (and probably reached 10,800 meters), both being unconscious at the maximum height. In 1862, Glaisher and Coxwell may have reached the height of 11,200 meters; but Glaisher was unconscious for a period of about 13 minutes, and the observations were uncertain.—*McAdie, Principles of Aerography, 1917, pp. 10-11.*

A NEW RECENSION OF ARISTOTLE'S METEOROLOGY.¹

Prof. Fobes's new text of Aristotle's Meteorology is a welcome addition to the little group of books, more or less (generally less) accessible to the modern meteorologist, whereby one may take stock of the progress that has been achieved in the study of the atmosphere since this study was elevated to the rank of a science by the Greek philosophers—above all, by Aristotle himself. Only a few of these books need be mentioned here. Of Aristotle's Meteorology the standard Greek text, prior to the appearance of the one here under review, was Bekker's; collated from four manuscripts and published by the Berlin Academy in 1831. In 1834-1836 appeared J. L. Ideler's revision of Bekker's text, accompanied by a new Latin translation, annotated extracts from the Greek commentaries of Alexander, Olympiodorus, and Philoponus, a very erudite Latin commentary by Ideler himself, and other relevant material—a monumental work. In 1863 was published J. Barthélemy Saint-Hilaire's French translation of the Meteorology, with introduction and copious explanatory notes. This is the only fairly accessible translation of the Meteorology in a modern language, and is therefore of unique interest to meteorologists who do not read Greek or Latin with facility. It is true that there are two English versions, viz, by Pargiter (1745) and Taylor (1812), but copies of them, especially the former, are exceedingly rare. Neither is represented in the Weather Bureau Library or in the Library of Congress. There are also two rare Italian versions, or paraphrases, both of the sixteenth century. An Italian translation by Aldo Mieli was announced for publication a few years ago, but has not yet appeared, so far as known to the present reviewer. Lastly, it is planned to include a translation of the Meteorology in The Works of Aristotle Translated into English, now in course of publication by the Clarendon Press, but, sad to say, E. W. Webster, who had this translation in hand, was one of the many young English scholars who laid down their lives in the recent war. A first-rate English version of this venerable work, especially one with comments from the standpoint of modern science, would fill a serious gap in the meteorological literature of our language. Meanwhile, a handy compend is, fortunately, furnished by T. E. Lones's Aristotle's Researches in Natural Science (London, 1912), of which Chapter III deals with meteorology.

As to other works presenting the views of the ancient Greeks on meteorological subjects, it need only be mentioned here that Ideler's Meteorologia Veterum Graecorum et Romanorum (Berlin, 1832) has now been advantageously replaced, so far as the Greeks are concerned, by the well-nigh exhaustive treatise of Otto Gilbert, Die meteorologischen Theorien des Griechischen Altertums (Leipzig, 1907).

¹ Aristotelis meteorologicorum libri quattuor recensuit indicem verborum addidit F. H. Fobes. Cantabrigiae Massachusettensum et typographeo academine Harvardianae. 1918. xviii, 236 p. 8^c.

Prof. Fobes's edition of the *Meteorology* is designed purely as a contribution to classical scholarship. To the meteorologist and the student of meteorological history it will be interesting primarily as furnishing an authoritative Greek text resulting from the careful collation of all existing manuscript material, and secondarily as supplying, through its nearly exhaustive "index verborum," a better concordance to Aristotle's work than has hitherto been available. The introduction and footnotes deal exclusively with textual matters, especially *variæ lectiones*.

The typography—a delight to the eye—reflects the highest credit on the Harvard University Press.—*C. F. Talman.*

LORD RAYLEIGH, METEOROLOGIST.*

[1842-1919.]

The death of Lord Rayleigh, June 30, 1919, was a loss to the human race. For half a century he continuously added, in a measure that few have ever equaled, to our knowledge of nature, and thereby profoundly benefited every civilized being, not alone of his own day and generation but alike of all time to come. Modern industry, modern prosperity, and indeed all that constitutes modern civilization, rest in large measure on the work of only a few men of transcendent genius, and of these Lord Rayleigh was one of the greatest.

His hundreds of papers cover nearly every field of physics; and many of them also extend far over into the realms of other sciences. It is two groups of these papers of double or, rather, of multiple interest that are the special occasion for this note, namely, those that concern the light of the sky, and those that deal with the composition of the atmosphere.

Sky colors.—The fact that the sky usually is blue, but occasionally violet, green, yellow, or red, has of course been known since there were eyes to see, or at least since eyes first became color sensitive. Many ingenious speculations were offered in explanation of these phenomena, but each was a worse failure, if possible, than its hopelessly inadequate predecessor, until in 1871 Lord Rayleigh explained them so completely and so clearly that the problem was at once, and still is, regarded as solved in all essentials.

*Sky polarization.*¹—It had also long been known that the light of the sky was partially polarized according to certain more or less definite laws, but this too was without explanation until Lord Rayleigh in his masterly paper on sky colors showed how, why, and to what extent, the light of the cloudless sky must always be polarized.

Composition of the atmosphere.—For more than a generation it has been confidently believed that the composition of the atmosphere was known even to mere traces, when in 1892 Lord Rayleigh showed that his belief was not well founded. He first showed that the "nitrogen" of the air was not the same as the nitrogen of chemical compounds; and then, working jointly with Ramsay, soon separated from the atmosphere a hitherto unknown gas, argon, that amounts to nearly 1 per cent of the whole by volume, and much more than 1 per cent by weight.

A quantity, therefore, of decided importance since its 200 pounds for every square yard of the earth's surface is perhaps twice as great as the average amount of water vapor.

The stimulus of the discovery of argon led at once to a searching examination of the atmosphere, and the discoveries in it of several other gases of the argon, or inert, family—helium, neon, krypton, and xenon.

Other studies.—In addition to the above three fundamental contributions to meteorology, Lord Rayleigh also made important additions to our knowledge of the vibrations of the atmosphere as a whole, with their relation to certain barometric changes; of stellar scintillation; of atmospheric refraction; and of the dynamics of revolving fluids.

These, then, are the many and more than sufficient reasons for writing "Lord Rayleigh, meteorologist."—*W. J. H.*

RICHARD H. CURTIS.

[1847-1919.]

By the death of Mr. Richard H. Curtis on May 21 meteorology has lost one who took a keen interest in its various branches for more than half a century. Mr. Curtis entered the meteorological department of the board of trade under Admiral FitzRoy in 1861. For a long time he prepared for the press the results of the work of observatories, and in 1907 he became superintendent of the instruments and observatories division of the office. * * * He retired from the meteorological office in 1912 at the age of 65, but continued to supply anemometric records to the office and rainfall records to Symons's *Meteorological Magazine* until a few months ago. * * * Mr. Curtis contributed many papers to the [Quarterly] Journal [of the Royal Meteorological Society] on various subjects, and especially on sunshine and wind force. He introduced an improvement in the mounting for the lens and bowl of the Campbell-Stokes sunshine recorder, and carried out interesting experiments on the distribution of wind pressure upon flat surfaces. He also aided in working up the atmospheric effects of the Krakatoa eruption of August, 1883, the results of which were incorporated in the report by the Royal Society.—*Nature (London), May 29, 1919, p. 250.*

UNIFICATION OF THE ASTRONOMICAL WITH THE METEOROLOGICAL DAY.

"It is announced that in the Nautical Almanac for 1925, the day is to be considered as beginning at midnight so as to make the astronomical day agree with the civil day. * * *

"It appears that this step is being taken chiefly in the interests of seamen but meteorologists will also welcome it because the agreement thus achieved between the astronomical and the meteorological day removes the possibility of confusion in stating the dates of observations. For many years the observers in astronomical observatories have used the two systems side by side but earlier records are to be found in which meteorological events are reckoned by astronomical time."—*Meteorological Office Circular 36, June 2, 1919, p. 1.*

* Three other obituaries, are published in *Nature (London)*, July 10, 1919, pp. 365-369.

¹For an excellent review of Lord Rayleigh's papers on the color and polarization of sky light, see *MONTHLY WEATHER REVIEW*, Sept., 1900, 28:382.