amount of wheat imported from North America in the 'seventies and 'eighties. In the past forty-three years Great Britain has lost 3½ million acres of tillage crops, including 1½ million acres of wheat, and has produced no more meat, although the milk production has doubtless increased. This fact supports the contention that the area of land under crops may be largely increased without any decrease of stock-keeping.

After contrasting the English and German increase in food-production in the past forty years as shown by the recent Memorandum of the Board of Agriculture, and summarising the recommendations of the English, Scottish, and Irish Committees for increased food production during the war, Prof. Somerville urges that the post-war problem of a large permanent increase in food production is the more difficult to solve. The solution of the problem is complicated by the consideration that if a durable peace is obtained there will be a long period available for the reconstruction of our agriculture, whilst if only an "armed" peace results from the present conflict, rearrangement will be necessary in the shortest possible time. Given that it is desirable to secure an increase of a million acres of wheat, many consider that this could be effected by guaranteeing a minimum price, which presumably would have to be extended to oats as well as to wheat, since the latter is of quite subordinate importance in Scotland and Ireland.

A rather more attractive suggestion is that farmers should be granted a bonus on the area of grass land converted to arable: this has recently been adopted in France. But there is one way in which an immediate and large increase in production can be effected, namely, by using on British land the whole of the ammonium sulphate produced in this country. Of the 400,000 tons of this fertiliser annually produced, 294,000 tons were exported in 1915, and for 1916 the amount was probably about 250,000 tons. If the latter were used on one-fourth of the area under wheat, oats, roots, potatoes, and hay, it would only give 60 lb. to the acre. Representing sulphate of ammonia in terms of wheat, the amount exported in 1916 is equivalent to 2½ million quarters of wheat—*i.e.* an addition of more than 30 per cent. to our present home-grown supply. Further, the exportation of fertiliser and importation of wheat require shipping to the extent of 800,000 tons, and result in an adverse trade balance of 4,575,000*l.*

The case for prohibiting the export of ammonium sulphate is enormously strengthened by the reduction in the import of sodium nitrate in 1916. Since the latter decrease has not been compensated for by increased use of sulphate of ammonia, the land must have suffered a reduction in fertility. The 40,000 tons of basic slag exported in 1916 could be used on British land even more easily than the ammonium sulphate. It would suffice to produce 3,200,000 lb. of meat annually for five years, and here again considerations of freight and exchange are in favour of prohibited export. The use of basic slag on second-rate and inferior pastures is the most certain way of increasing production of food, and it is important now, because it involves only a fraction of the man and horse labour necessary for tillage.

Prof. Somerville is of the opinion that some measure of compulsion will be necessary, and advocates the establishment of local committees to decide which farms can make best use of the sulphate of ammonia and basic slag available, and which grass lands are to be tilled. Although recognising their obvious advantages, he considers that the creation of small holdings would prove more a hindrance than a help in regard to the production of the major part of the people's food.

ITALIAN METEOROLOGY.[1]

A NUMBER of useful meteorological memoirs by Prof. Eredia, of the Central Meteorological and Geophysical Institute of Rome, deal with various aspects of the meteorology of Italy. No. 1 is the Italian meteorological observers' handbook, copiously illustrated, in which full instructions are given regarding the installation of instruments for a normal station, along with practical hints regarding its maintenance. Instructions are also given for the taking of phenological observations. "The Variation of the Climate in Italy" (No. 2) is a reprint of a paper read at the tenth International Geographical Congress held in Rome during 1913, in which the mean annual temperature from 1866 to 1910 at sixteen stations is discussed. The warmest year was 1879, except in the insular areas, while 1900 was the coldest. The temperature variations, it may be said, are in general the reverse of those in the British Isles. Fog frequency over the region embraced by Lombardy, Venetia, and Emilia, based on data for twenty-three stations over the period 1892–1914, forms the subject-matter of No. 3. From May to August there are few fogs, the maximum taking place in winter Maps of fog frequency are given for the autumn, winter, and for the year, while several isobaric charts indicate the conditions associated with some winter fogs.

The storm of October 7, 1915, along with a synopsis of storm frequency at the Tripoli Observatory from 1892 to 1914, is dealt with in No. 4. Isobaric charts referring to 8 a.m. and 9 p.m. illustrate the progress of the October storm. At Tripoli during the twenty-three years under consideration 164 storms were observed, the greatest number recorded being twenty in 1906, and the least number two in 1913 and 1914. The frequency by seasons shows that autumn is the stormiest time of the year with sixty-nine instances, followed by spring with forty-five, winter with thirty-three, while in summer only seventeen were noted. The diurnal period shows a maximum in the three hours ending 9 p.m., when storms are six times more numerous than in the three hours ending with 3 p.m. The rainfall associated with the storms discussed is small. In forty-five cases none was measured, and in forty-one other cases less than 5 mm. fell. In nineteen instances the fall exceeded 20 mm. A general review of the various drosometers hitherto employed for the registration of the amount of dew is given in No. 5, along with a description of a new form employed by the institute, which has many features to recommend it. R. C. M.

ETHNOBOTANY OF AMERICAN INDIANS.

IN the thirtieth annual report of the Bureau of American Ethnology, Mr. M. C. Stevenson publishes an elaborate article on the ethnobotany of the Zuni Indians. This tribe had discovered the medicinal value of a large number of plants, one of the most important of which is the Jamestown weed (*Datura meteloides*), and the writer observes that from the symptoms caused by this drug, its homœopathic adaptability to hydrophobia will be at once evident. "There is no drug so far proven that deserves as thorough and careful a trial in this dread disease as stramonium." "They learned the value of *Datura meteloides* as a narcotic perhaps centuries before the birth of Baron Stoerck, of Vienna, who first brought it to the atten-

[1] (1) "Norme per l'impianto e per il funzionamento della stazioni termo-udometriche." Pp. 41. (Rome, 1916.) (2) "Le variazioni del clima in Italia." Pp. 23. (Rome, 1915.) (3) "Le nebbie in Val Padana." Pp. 12+ charts. (Rome, 1916.) (4) "Sul temporale verificatori a Tripoli nell' ottobre 1915 e sulla distribuzione dei temporali en Tripolitania." Pp. 17. (Rome, 1916.) (5) "Sulla misurazione della rugiada." Pp. 11. (Firenze, 1915.)