

again the higher extraction flours received the approbation of 78.5 per cent.

7. "From your experience, which is the best flour, white, whole-wheat or graham?" Only 8 per cent. were in favor of the white flour, while 65 per cent. expressed a preference for the other flours.

Dr. Louis Lapique, a nutrition chemist for the French government, stated recently³ that his experiments led him to conclude that 85 per cent. extraction is necessary in France and that "for every five parts which are added when the yield is increased from 80 to 85, four of these are available."

When the layman is debating as to the best policy to formulate in stocking the family larder, he should keep in mind that the higher extraction flours are (1) not normally harmful, (2) are digested almost as completely as the lower extraction flours, (3) contain more valuable nutrients in the form of "vitamines" or growth-promoting substances, and mineral salts, (4) can be manufactured more cheaply when the public demands more of the whole wheat flour, (5) that the laxative action is beneficial, (6) and what is more important at the present time, more grain will be released for the allied armies, and (7) that these conclusions are supported by the majority of nutrition authorities.

If it is true that food will win the war, it is certainly a patriotic duty to save and conserve our wheat. One method is to include as a part of our daily diet food products made from higher extraction flours.

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SCIENTIFIC EVENTS

THE OUTLOOK IN FRENCH AGRICULTURE

THE *Revue Scientifique* for September 22 contains a report on the position and prospects of French agriculture presented by M. Louis Mangin, of the Académie des Sciences, to the National Council of the Ligue Française on behalf of the Committee on Economic Organization of that body. According to an abstract

³ *Comptes Rendus de l'Académie de Sciences*, Vol. 165, p. 143.

in *Nature* wheat production has fallen to barely 70 per cent. of the pre-war crop, potatoes to 80 per cent., wine to 65 per cent. and sugar-beet to little more than 30 per cent. The situation as regards live stock shows the same disquieting features. Practically 20 per cent. of the pre-war head of cattle fell into the hands of the enemy, and ill-devised measures taken to secure the meat supply in the early days of the war further seriously accentuated the shrinkage. Although the cattle position from the point of view of numbers has since been substantially improved, the proportion of young stock is so great that substantial relief of the meat stringency can not be expected from home resources for a considerable time. The decline in numbers of sheep which had set in long before the war has been greatly accentuated. Pigs also show a decline of 38 per cent. since the end of 1913. No reference is made to the position as regards milk production. A survey of the forest area completes the tale of depleted resources, something like one eighth of this area having been already denuded, with but little provision for its replacement.

Many suggestions are put forward for the relief of the present situation and for the future restoration and strengthening of French agriculture. The claims of rice as a diluent of wheaten flour are strongly urged in view of the large supplies available in the Asiatic colonies. To overcome the difficulties of shortage of manual labor on the land, the organization of supplies of African and yellow labor is suggested, whilst further relief could be obtained by a more active policy with reference to the production and use of motor tractors and farm machinery in general. The example of England in placing this manufacture under the same control as that of munitions of war is warmly commended. Consolidation of estates is urgently necessary and should be accompanied by a revision of the register of lands. The price of corn should be left sufficiently free to rise to encourage production, whilst at the same time the rise in the price of bread should be restricted by all appropriate means. It is suggested that these two ap-

parently irreconcilable objects can be effectively attained through the establishment of municipal bread bureaus, which should subsidize or tax the bakers according to the fluctuations in the price of corn. This expedient was successfully resorted to during the Crimean War.

It is urged that the home production of manures should be fostered by using every measure to increase the output of sulphate of ammonia, by developing the synthetic manufacture of nitrates and ammonia from the atmosphere, and by increasing the production of superphosphate, all of which industries, it is urged, should have the same privileges as munition factories. To secure increased crops arrangements should be made for free distribution of manures to small cultivators.

Measures must be taken for restoring the head of live stock. To this end restrictions must be placed upon slaughter of home stock; the colonial resources of Madagascar and Africa must be drawn upon for meat, to be prepared there in frozen or otherwise preserved condition in order to reduce costs of transport. For the same reason abattoirs and refrigerating plants should be established in the home meat-producing districts, whereby cheaper production and reduction in the number of middlemen would be secured. The strong prejudice of the people against refrigerated or preserved meat must be broken down, and much could be done in this direction by the use of such products throughout the Army and Navy.

THE SHALER MEMORIAL EXPEDITION

AFTER the death of Professor Nathaniel Southgate Shaler a group of more than 700 Harvard alumni raised an endowment for the "Shaler Memorial Fund," the income of which was to be used for geological research. The *Harvard Alumni Journal* reports that carrying out of the purpose for which that fund was created, a Shaler Memorial Expedition was organized last year to cover much the same ground which Professor Shaler himself traversed in a journey during the summer of 1873. The expedition of 1917 set out to study

the stratigraphy of the Ordovician formations from Pennsylvania to Alabama; were Professor Shaler alive, he would be especially interested in the attempt to correlate formations over so large an area, or, as he expressed it, the study of "that wonderful record of the first stages of the life and sea."

Professor J. B. Woodworth conducted the first Shaler Memorial Expedition; it went to Brazil in 1908. The expedition of 1917 to the Appalachians was conducted by Dr. Percy E. Raymond, associate professor of paleontology and curator of invertebrate paleontology at Harvard University, who started from Cambridge on August 1. He was joined at Salem, Va., by Mr. Richard M. Field, lecturer at Brown University. Thence the party worked southward as far as Bristol, Tenn. Dr. Ellis W. Shuler, of the Southern Methodist University, Texas, acted as guide from Blacksburg to Bristol.

As in Professor Shaler's expedition of 1873, the travelers of 1917 had to be "free to move in any direction." Even with the greatly improved railroad facilities, it was next to impossible, without independent means of transportation, to cross and recross the mountains along their entire length, in the time allowed. The Appalachians still remain a great barrier to the interior of our country, a fact of considerable military significance. But the automobile solved the problem of transportation, as the wagon did in 1873; although tire and engine trouble occurred, the car was a great aid in reaching distant and out-of-the-way sections, and bringing in specimens.

During the first field-season the party was able to work the principal sections between Pennsylvania and Tennessee, and it is hoped that two additional years of intensive study, especially the northward, will supply the material for a thorough description of the Ordovician rocks and faunas of the Appalachians.

The first year's work has already brought to light facts regarding the nature and distribution of sediments and faunas which are original and contrary to some preconceived ideas. The field work in Central Pennsylvania, which was started independently in 1915 by