

proportion of the cost, both of much old work and of new developments, should fall upon the grants."

The important changes set forth in the draft await, however, in their main proposals the close of the war, but having regard to the admitted fact that more than two millions of the adolescent population between thirteen and eighteen years of age cease to avail themselves of all opportunities of further education, no measures will be really effective for the future education of the young people until all exemptions from school up to at least fourteen years of age are removed and provision made for continued education within working hours until eighteen years of age. It is to be hoped, as the Board desires, that the experienced administrators of the various authorities and the teachers will give careful consideration to this important manifesto of the Board.

THE SUPPLY OF CEREALS.

THE recently published "Statistical Notes on the Cereals" (No. 5, March, 1917) issued by the International Institute of Agriculture must be regarded in the existing situation as a compilation of more than ordinary interest, representing as it does the most precise information obtainable as to the results of last season's corn harvests throughout the world. Preliminary estimates issued from time to time have pointed with lamentable uniformity to a serious shortage of corn supplies as compared with recent years, and the final record fully bears them out. Interest centres specially in the yield of cereals available for international trade, which excludes enemy countries, territories invaded by the enemy, and countries such as the uninvaded portions of Rumania and European Russia, export from which is prevented by the war. The total yield of wheat from all other sources shows a decline of 27.7 per cent. as compared with the excellent harvest of 1915, and 16.9 per cent. as compared with the average of the five seasons 1911-15. The rye crop shows corresponding deficiencies of 2.9 per cent. and 4.1 per cent.; barley, 9.9 per cent. and 4.1 per cent.; oats, 6.9 per cent. and 3.2 per cent.; and maize, 15.9 per cent. and 12.1 per cent. respectively. Taking wheat and rye together as the staple bread-corn crops, the total deficiency as compared with 1915-16 is 26.3 per cent., or 16.1 per cent. below the five-year average, whilst the total of the three "fodder-corn" crops shows corresponding deficiencies of 15.5 per cent. and 8.8 per cent. respectively. Now that all corn has become bread-corn the grand total is of interest, and this shows deficiencies of 19.6 per cent. and 11.4 per cent. respectively.

In order to get a true picture of the balance between production and consumption it is necessary, however, to bring further into the account the "carry-over" from previous seasons' crops, which fortunately in the case of wheat, oats, and maize was large. Even then, however, the available supplies fall short of estimated normal consumption for every crop except oats. In the case of wheat the whole supply of crop and reserve fails to meet normal consumption by roughly 2 per cent., whilst the total supplies of grain of all kinds show a deficiency below consumption requirements of fully 3 per cent. These deficiencies may appear to be small, but it must be remembered that they involve the entire consumption of the remainder left on hand from the superb crop of 1915 and leave absolutely no margin of insurance against a further unfavourable crop in the current season. When we make allowance further for the large quantities of corn which must have been lost on the high seas, it must be admitted that the case for a drastic reduction in cereal consumption has been proved beyond challenge.

NO. 2482, VOL. 99]

TESTS FOR GLANDERS IN ARMY HORSES.

UNDER the title "The Value of the Intra-dermo Palpebral Method of Malleinisation," Major Hobday has recorded in the *Veterinary Journal* for December, 1916, his experience concerning the value of the palpebral test for glanders in horses, as employed in the French Army by Vet.-Major Lamarque, Prof. Douville, and M. Drouin. After a very extensive application of the test, he is very favourably impressed with it, claiming several advantages for it as compared with the subcutaneous test carried out in the region of the neck more widely resorted to in this country.

The chief advantages claimed are especially notable where large numbers of horses have to be speedily tested, and are summarised by Major Hobday as follows: (1) The greater convenience of transport (since the required dose is so much smaller); (2) the ease and rapidity of administration; (3) the great advantage of visibility (since swelling in the region of the eyelids is so much more perceptible than swelling in the subcutaneous region of the neck); (4) that the reaction is more violent and more rapid, and no time is wasted by taking temperatures, which is unnecessary; and (5) that the cost is less owing to the smaller dose used.

For the test concentrated mallein is used, and two minims are injected with antiseptic precautions "intra-dermally in the under-eyelid, about the centre, but slightly inclined to the inner canthus." The eyes are inspected in about twenty-four hours, and again in about thirty-six or forty-eight hours, after injection. A positive reaction consists of a discharge of mucus from the inner canthus, and a characteristic swelling of one or both eyelids, closing up the orbit to a greater or less degree, and being excessively tender. The swelling, which persists for three or four days, extends downwards over the submaxillary region, and there may be a cording of the lymphatics extending to the submaxillary gland, which is swollen and tender. This test for glanders is undoubtedly of great value when large numbers of horses have to be speedily inspected, but whether it will prove as efficient or as generally trustworthy as the older subcutaneous test, in which the local reaction is accompanied by a thermal reaction which serves as a check, remains to be proved.

RHUBARB.

"IT is the interest of Mankind that all persons should be caution'd of advent'ring upon unknown herbs and plants to their prejudice." These words, written by John Ray more than two centuries ago, and quoted by his distinguished contemporary, John Evelyn, in his "Acetaria," are seasonable still, and, indeed, in view of the recent "advent'ring" with regard to rhubarb-leaves, have to-day a special significance and interest. Were our famous countryman of Stuart times living at this hour, it is quite conceivable that, great experimentalist as he was, and endowed with more than the usual share of the "interest of Mankind," he would have devoted himself with energy and skill to the solution of some of the problems that confront us now, and some pertinent remarks on the question of utilising rhubarb-leaves as a vegetable would have been likely to appear over his signature in the columns of the daily newspapers. Had he in such circumstances recommended them, we can well imagine that his recommendation would have been accompanied by a warning similar to that quoted above, or more cogent, and printed in large clarendon capitals or italics.

An appeal has been made to history to supply an authority for consuming rhubarb-leaves now, and some prominence has been given to the statement which reposes in some books of considerable authenticity that they were used as a pot-herb in Queen Elizabeth's time. If they really were so used, and even with perfect safety, and were then "considered to be superior to spinach or beet," it is poor comfort to offer to those who in 1917 are suffering the tortures of poisoning arising as a consequence of eating them. That numerous cases of more or less serious illness, and at least one fatality, as reported within the last few weeks in the daily Press, have followed the eating of rhubarb leaf-blades, is accepted as a fact which should leave no doubt in one's mind that they form to many people an unwholesome and even a dangerous food.

In inquiring into the use of rhubarb, mainly with the view of getting evidence from the records of the past as to the use of its leaves as a vegetable, and what were the opinions held regarding such a practice by those who have gone before, some notes which here and there may contain fragments of interesting and useful information have been accumulated, and may be worth putting on record in a collected form.

It is not intended to go far into the botany of rhubarb. The vexed question of the source, or sources, of medicinal rhubarb has led to much controversy. That does not concern us here. The rhubarb used for culinary purposes to-day appears to have originated from more than one species. Some writers attribute its origin to *Rheum Rhabonticum*, Linn., and there seems no reason to doubt that it was this species that was first used in this country for culinary purposes, as well as being the first grown in England for its medicinal root. Moreover, it was the first species introduced into cultivation here, and from early times has been known as English rhubarb. Another species believed to be the parent of culinary rhubarb is *R. undulatum*, Linn., introduced in 1734, while *R. hybridum*, Murr., which, according to Aiton, was introduced in 1763 by Dr. John Hope, F.R.S., who had a garden at Upton, West Ham, is claimed by some authors as the original source of the common garden rhubarb of to-day. All three, and probably other species, are involved in its parentage. For many years it has been cultivated in many varieties differing in size and colour of leaf-stalks, flavour, and in degree of earliness.

Evelyn did not appear to know the rhubarb plant. He does not allude to it in his "Acetaria." Nor can we get any evidence from other writers of his time to support the reiterated statement that *Rheum Rhabonticum* was introduced in 1573, and our investigations induce us to say that whatever else flourished in this country in Queen Elizabeth's reign no species of Rheum had any chance at all, for none was in the gardens of her day. Whatever delights and good times the Elizabethans had, they owed nothing to a dish of stewed rhubarb or a rhubarb-tart, and whatever bad times—whatever pains they endured—could not be laid to the charge of rhubarb-leaves in any form. The delights arising from the former were reserved for a much later, if not more fortunate, generation, and the tortures arising from the latter for our more immediate forefathers in some degree, but chiefly for ourselves.

We have suggested that the statement that rhubarb-leaves were used as a pot-herb in Queen Elizabeth's time cannot be trusted. It is apparently based on a mistake which originated out of a confusion of terms. John Gerard described and figured a certain plant in the first edition (1597) of his famous "Herball," under the name of *Hippolapathum sativum*, Pafience, or Munkes (Monkes) Rubarbe, the last name "because

as it should seeme some Monke or other have used the roote heereof in steede of Rubarbe." This, he says, "is an excellent holsome potherbe," but "it is not so pleasant to be eaten as either Beetes or Spinage." There is no doubt whatever that this plant is not a true rhubarb, but is a dock, and has been rightly referred by careful writers to *Rumex Patientia*, Linn., Herb Pafience, a native of Southern Europe and the Orient. The name, "Monk's rhubarb," has also obtained currency in many works, including Syme's edition of "English Botany," for *Rumex alpinus*, Linn., a dock with large, roundish, radical leaves, found occasionally in this country, presumably as an escape from cultivation. This plant was known to Gerard, who included it in his "Herball" under the name of *Hippolapathum rotundifolium* (Bastarde Rubarbe), and he cultivated it in his garden in Holborn. Both these docks were evidently in gardens of the sixteenth century, and possibly long before, and were cultivated as pot-herbs, or the latter, according to Gerard, as a medicinal plant. Medicinal rhubarb was known to Gerard, but evidently only in the form of the dried root, which he figures. No evidence has been discovered to prove that any species of the true rhubarb (*Rheum*) was in cultivation in England before early in the seventeenth century, when John Parkinson, some time (probably not many years) before 1629, obtained a plant of what is now regarded as *Rheum Rhabonticum*, Linn. This he cultivated, and it is figured and described in the first edition of his "Paradisus Terrestris," 1629, under the name of *Rhabonticum verum seu potius Rhabarbarum verum*. Of it he wrote:—"I have a kinde of round leaved Dock growing in my Garden, which was sent me from beyond Sea by a worthy gentleman, Mr. Dr. Matth. Lister, one of the Kings Physitians, with this title, *Rhabonticum verum*, and first grew with me, before it was ever seen or known elsewhere in England." After some reference to the character and medicinal properties of the roots, he continued:—"The leaves have a fine acide taste. A syrrepe therefore made with the juice and sugar, cannot but be very effectually in dejected appetites, and hot fits of agues; as also to helpe to open obstructions of the liver, as divers have often tryed, and found available by experience."

By some curious blunder, Monk's rhubarb has also been identified with *Rheum Rhabonticum*; hence in many works it is stated that this plant was introduced in 1573, apparently on no better evidence than is supplied by the fact that Tusser included the name "rubarb" in his "Five Hundreth Points of Good Husbandry" of that date. In the edition of 1672 this name, without any qualification whatever, occurs in a list under the heading, "necessary herbs to grow in the Garden of Physick, not rehearsed before." This "rubarb" is probably *Rumex Patientia*, or *R. alpinus*—in "English Botany" it is represented as the latter. It is practically certain that it was not *Rheum Rhabonticum*.

It will be noticed that Parkinson refers to the fine acid taste of the leaves of the rhubarb which he cultivated. It is not clear whether he was alluding to the leaf-blade or leaf-stalk, but apparently he viewed this plant only as medicinal, and it seems impossible to determine the approximate date when rhubarb was first used for culinary purposes as we use it to-day. The practice of so using it was known to Philip Miller in 1752, for in the sixth edition of his "Gardeners' Dictionary" he wrote:—"This sort [*Rheum Rhabonticum*] is frequently cultivated in the gardens, and is call'd English Rhubarb. The roots of this enter as an ingredient into several compound medicines; and of late years, the footstalks of the leaves have been used for making of tarts in the spring of

the year, as these may be had before gooseberries are large enough for that purpose. These footstalks must have their outer skin peel'd off, otherwise they will be very stringy: when this is done, the pulpy part will bake very tender, and almost as clear as the apricot; and having an agreeable acid flavour, is by many persons esteemed for this purpose."

Rheum Rhaponticum has been cultivated in the neighbourhood of Banbury, mainly for the sake of its root, since about the year 1777. W. Bigg, writing in 1846 (*Pharm. Journ.*, vol. vi., p. 75) on its cultivation there, said:—"Of the leaves, I believe no use is now made, except the use common to all vegetable offal—manuring. The leaf-stalks are now very partially sold for the table. In former years, the sale of the leaf-stalks formed a part of the trade, but it can scarcely be said to do so now. Wine has been occasionally made of them, but not to any important extent. . . . The leaves were some years ago in demand (I have reason to think) for the adulteration of tobacco, or the manufacture of cigars, but are not at present."

It is stated in *Loudon's Gardeners' Magazine*, vol. vii., 1831, p. 369, that poor people in the neighbourhood of Glasgow were in the habit of using rhubarb-leaves as a remedy for, or for the relief of, rheumatism. Heated leaves were applied to the parts affected.

If there was anything like a general appreciation of rhubarb as a substitute for fruit about the middle of the eighteenth century it must have declined so much in favour as to have been little used at the beginning of the nineteenth, for it is recorded that Mr. Joseph Myatt, of Deptford, about the year 1810, sent his two sons to the Borough Market with five bunches of rhubarb, and of these they succeeded in selling only three. But he persevered in his efforts to make a market for the vegetable, raised improved varieties, and before many years had elapsed rhubarb as a culinary plant was established in public favour. According to *Loudon's Gardeners' Magazine*, vol. iv., p. 245, at the beginning of June, 1828, the demand for rhubarb in the Newcastle-upon-Tyne market was so considerable that 100 sticks sold for 5s. In 1831 (*loc. cit.*, vol. vii., p. 682) the culture of tart-rhubarb had increased so rapidly about Edinburgh that one grower for the market, who a few years before found great difficulty in selling forty or fifty dozens of bunches of stalks in a morning, sold from three to four hundred dozens of bunches. The common price of tart-rhubarb in the Edinburgh market at that time was 2d. a bunch of a dozen stalks, while in Glasgow the same quantity was sold for 3d.

We are informed that Myatt obtained his first roots from Isaac Oldaker, gardener to Sir Joseph Banks, and Oldaker had brought them from St. Petersburg, having been gardener to the Emperor of Russia. They represented a finer and earlier kind than those previously cultivated in English gardens.

Several papers in the Transactions of the Horticultural Society of London show that in the second and third decades of last century a great deal of attention was paid to the forcing and blanching of rhubarb. In 1824 Mr. James Smith, gardener at Hopetoun House, was awarded the society's silver medal for devising a simple, effectual, and economical mode of forcing the plant. It appears that the method of blanching was discovered by accident in the Chelsea Physic Garden in 1815 (*Trans. Hort. Soc. Lond.*, vol. ii., p. 258).

It was long ago realised that the use of rhubarb as food was attended with some risk to health. Lindley ("Vegetable Kingdom," 1846, p. 503) remarked that oxalic acid is copiously formed in both docks and rhubarbs, and that the latter also contain an abund-

ance of nitric and malic acids. While these give an agreeable taste to the stalks of rhubarb when cooked, he regarded them as being ill-suited to the digestion of some persons. The "Penny Cyclopædia," 1841, warned persons subject to calculous complaints against eating tarts made from rhubarb leaf-stalks, owing to the presence of oxalic acid, and that "the formation of the oxalate of lime, or mulberry calculus, may be the consequence of indulgence."

A note in the *Gardeners' Chronicle*, 1846, p. 5, by Alexander Forsyth, who was gardener to the Earl of Shrewsbury at Alton Towers, Staffordshire, has been recently referred to in newspapers as showing that rhubarb-leaves were in use about that time for culinary purposes. Forsyth wrote:—"We have been in the habit of eating the leaves of the rhubarb-plant for many years, and seeing that the fruit-stalks of this vegetable were counted as waste, I thought it very likely that they were the better part of the plant, and I now find that the pouches of unopened flowers bear the same relation to the leaves of rhubarb that cauliflower do to cabbage-leaves, and may be obtained in great abundance, and that at a time (April) when all kinds of vegetables are valuable." He refers to using the young inflorescence, which he called Rhaflower, "as a boiled vegetable, to be used like broccoli." The meaning of his statement about eating the leaves of rhubarb was not clear then, but in a subsequent note (*Gardeners' Chronicle*, 1847, p. 325) there is no doubt at all that by leaves he meant the leaf-stalks, and not the blades, for he wrote:—"I have no experience in the eating of the leaves, and think them nauseous to the taste and unpleasant to the smell, and it seldom happens that any article is good for food when all the three senses of sight, taste, and smell reject it; it is not a good green colour. I tasted them boiled, and they did not appear to me to have one redeeming quality to keep them an instant from the dung-heap." In the latter note Forsyth again referred to eating the cooked flower-heads of rhubarb, and stated that he and others had done so without experiencing any ill-effects. But he directed attention to the fact that during the season (spring, 1847) there was a general complaint against the eating of the stalks of rhubarb-leaves, as violent relaxation had resulted. Another correspondent to the *Gardeners' Chronicle* (1847, p. 325) suggested that illness from eating rhubarb—apparently he meant the inflorescence—may have been due to the variety, and stated that a medical man whom he knew had a plant of rhubarb in his garden which was particularly early, and which, used in tarts, invariably caused illness in those who ate it, while other plants growing in the same bed, but which were a little later, were quite wholesome. The same effects had been observed for several years, until at length he destroyed the offending plant.

A reference to the *Gardeners' Chronicle* (1847, pp. 283, 341, 357) will show the varying results of eating the young inflorescence, producing no ill-effects in some cases and serious illness in others; and in the same journal (1847, p. 283) a case is recorded of a Chelsea woman who boiled rhubarb-leaves as a substitute for spinach, and all three of those who ate of the dish were attacked with sickness, one of them, a boy, being also afflicted with swellings about the mouth. An editorial comment on this runs as follows:—"We are not aware of any similar instances of serious consequences following the use of rhubarb, but it is by no means surprising that a plant which forms so much oxalic acid should be unsafe, and we recommend the subject to serious chemical inquiry. It is quite conceivable that the leaves should contain some principle which the stalks are deficient in, as indeed is proved by the different manner in which the juice of the leaf-stalks and leaves is affected by the

same reagents; but until there shall have been time for a careful inquiry into the organic products of these two parts we can only warn the public against employing for food any part of the rhubarb except that which experience shows to be harmless."

The Garden (1872, vol. i., p. 197) contains an extract from an American paper which shows that a woman residing between Oneida and Durhamville, New York, died from the effects of eating as greens the leaves of rhubarb, or pie-plant as it is known in the United States, her death taking place after three weeks of suffering. "The leaves are poisonous, and should never be eaten," concludes the paper's announcement of the fatality.

Judging from published statements (*Gardeners' Chronicle*, ser. 3, vol. xv., pp. 340, 353, 384, 400), there was a revival of interest in the question of eating rhubarb-leaves in 1899. One correspondent wrote (p. 384):—"Rhubarb-spinach has been for many years a favourite dish with us"; but the Secretary of the Massachusetts Horticultural Society communicated the following warning (p. 400).—"The *Gardeners' Chronicle* for May 27 is at hand this morning and the note on 'Rhubarb-leaves as a Vegetable' prompts me to say to you that instances have been known here where their use as 'greens' has caused fatal results owing to the excess of oxalic acid. A horticultural friend told me many years ago that he had raised many seedlings, some of which (I assume that the usual part was cooked in the usual way) caused vomiting as certainly as ipecacuanha."

A curious case is reported in the *Pharmaceutical Journal* (1901, vol. lxxvi., p. 639) as follows:—"At an inquest held at Ashstead on Friday, May 3, concerning the death of John Lintott (thirty-nine), a scaffolder, it was stated that on the previous Monday deceased complained of violent pains and a doctor prescribed for him, having found that he was suffering from a gastric attack. After the doctor left the patient some cooked rhubarb-leaves were given to him as medicine, it being stated that the leaves were used as a vegetable in parts of Hampshire. The man died next day, and the doctor expressed the opinion that death was due to excessive vomiting, causing exhaustion, produced by eating rhubarb-leaves. The coroner expressed surprise at hearing that stewed rhubarb-leaves were used as a medicine or as a vegetable. A verdict was returned of 'Accidental death, caused by eating rhubarb-leaves.'"

In 1911, vol. lxxxvi., p. 8, the same journal contains the following, extracted from the *British Medical Journal* of December 31, 1910:—"The author [Dr. W. E. Burton] mentions two cases of rhubarb-poisoning to which he was called, the symptoms being similar in each case, and refers to the death from the use of rhubarb which was the subject of a coroner's inquest at Catford some weeks since. Rhubarb, although rightly regarded as a wholesome food and an excellent substitute for fruit, does not agree with everyone. It is possible that the presence of oxalates in the urine and the severe intestinal irritation indicate oxalic acid as being one of the agents responsible for the toxic action. Oxalic acid and oxalates, chrysophanic acid, and phaeoretin are all found in rhubarb-root, and are of an irritating nature."

In a discussion on rhubarb-wine (*Gardeners' Chronicle*, 1853, p. 406), the observations of one writer seem to have especial interest as a possible explanation of the cause of the variable effects produced by eating rhubarb:—"However good the wine made from rhubarb may be, I take the liberty of advising your readers not to drink it. It is well known that the acidity of rhubarb-stalks is owing to the presence of an acid salt—the binoxalate of potash—a combina-

tion of the poison oxalic acid and the alkali potash. This salt does not exist in sufficient quantity in the rhubarb-stalks to produce its poisonous effects, and the same may be said of the wine. But there is another danger attending its use in the form of wine which ought not to be overlooked. All hard water contains lime, and when mixed with the juice of the rhubarb-stalks the binoxalate of potash is decomposed and an oxalate of lime is formed. Now this oxalate of lime is the constituent principle of the mulberry calculus, and there is a peculiar condition of the human body known to medical men as the oxalic diathesis, which depends upon the presence of this oxalate of lime in the blood (I use the word blood for obvious reasons). This oxalic diathesis has been proved by Dr. Golding Bird to be much more common than it was supposed before this gentleman brought the microscope to assist him in his pathological researches. Such being the case, it is obvious that any article of common use which contains this oxalate of lime, or even the oxalic acid or its salts, must be more or less injurious to health, more particularly to those in whom there exists a predisposition to assume the oxalic diathesis. It must be borne in mind that oxalic acid is formed in the human body by the decomposition of sugar, urea, etc., and the diathesis is not uncommon from this cause. If it is thus easily produced indirectly, *a fortiori* it is still more likely to arise from the direct means of rhubarb-wine. Therefore I say to your readers, eschew the doubtless very agreeable beverage which has entered, through the medium of your columns, into competition with genuine 'Sillery mousseaux.'"

The eminent physician and chemist, Dr. William Prout, F.R.S. (1785-1850), regarded rhubarb as likely to be a dangerous food owing to the large amount of oxalic acid present in the leaf-stalks. Having analysed wine made from the stalks, he considered it a most pernicious drink, and that its frequent use was likely to produce stone in the bladder. He expressed the opinion that an Act of Parliament ought to be passed, if necessary, to prevent the sale of so dangerous a poison (*Gardeners' Chronicle*, 1853, p. 438).

There is possibly something in the suggestion that the chemical composition of rhubarb varies to some extent according to the variety and also according to the soil on which it is grown. A writer in the *Gardeners' Chronicle* (1853, p. 357) stated that the amount of water present was less when the plants were grown on poorer soil, while the acid principle was more abundant.

Mr. Edward Solly, F.R.S., published in the Transactions of the Horticultural Society of London, ser. 2, vol. iii., 1848, pp. 35-92 the results of his experiments on the inorganic constituents of plants. Among the numerous plants on which he experimented were several rhubarbs. In the case of each of these he gives the respective amounts of water, organic matter, and inorganic matter found both in leaves and leaf-stalks. In every case, as he shows by figures, there was considerably less water present in the leaves than in the leaf-stalks, but in most cases almost double, in a few more than double, the amount, always very considerably more, of organic and inorganic matter was present in the former. It is therefore natural to assume from the results of his investigations that oxalic acid, or whatever is deleterious in the rhubarb-plant, is present in greater proportions in the leaf-blade than in the leaf-stalk.

It may be left to the discretion of those who chance to read this article to decide whether or not it is advisable to eat cooked rhubarb-leaves or rhubarb in any form. For at least a century the consumption every year of the leaf-stalks as a substitute for fruit has

been enormous. It is well known to be usually a wholesome, and certainly a useful, food. Compared with its extensive use, the cases of illness charged against it may be regarded as negligible. The inflorescence has also been tried, but evidently not very much, and with diverse results. The consumption of the leaf-blades has apparently never been general or considerable, by no means comparable with that of the leaf-stalks, but the baneful effects of doing so are relatively so marked that it may be said decisively that rhubarb leaf-blades cannot be recommended for general use as a food. While experiments in such matters are often necessary, and, if attended with caution, are desirable, carelessness in recommending them or in putting them into practice may place one in a less enviable position than those of whom it has been said, "Happy from such conceal'd, if still do lie, of roots and herbs the unwholsom luxury"; and the injudicious experiment in eating insufficiently tested articles of food may lead one to "discover their malignity in dangerous and dreadful symptoms."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—The eighth Halley lecture will be delivered at the University Museum on Tuesday, June 12, at 5.30 p.m., by Prof. Arthur Schuster. The subject is "Terrestrial Magnetism: Past, Present, and Future."

On May 22 Congregation passed the preambles of a series of statutes reconstituting the boards of electors to various professorships, and establishing a committee for advanced studies.

The annual report of the visitors of the University Observatory has been presented to Convocation. In it the visitors express their sorrow at the death of the late Prof. Esson, who acted as secretary to the visitors during the whole forty-two years of the work of the observatory. Several lectures to military bodies have been given by the director (Prof. H. H. Turner), including lectures in France and in the camps on Salisbury Plain. Research has gone forward in spite of unavoidable drawbacks, and many papers have been published by members of the staff and others in the course of the year. These include valuable memoirs by Prof. Turner, Miss E. F. Bellamy, Miss M. A. Blagg (on Baxendell's "Variable Stars"), and Mr. R. J. Pocock.

MISS BOWEN COLTHURST has been appointed principal of the College of Agriculture, Holmes Chapel, Cheshire. The college is connected with the University of Manchester, and is fully equipped for thorough training in practical and scientific agriculture.

AN influential deputation of London members of Parliament and of the London County Council Education Committee and officials waited upon Mr. Fisher at the Board of Education on Tuesday to ask the Board for an increased grant for education purposes in London. In reply Mr. Fisher said he was prepared to recommend to the Treasury that an increased grant should be made. The grant would probably amount to something above 1,000,000*l.*, but it would be given on the distinct understanding that the money should be used for education purposes only, and not for relief of present rates.

THE Elementary Education Sub-Committee of the London County Council has had under consideration the following resolution passed by the Central Consultative Committee of Headmasters:—"That the time is now ripe for the compulsory introduction of the metric system." The sub-committee is of the opinion that the time has now arrived when, in order to

obviate the waste of time which is caused in the schools by the present system of weights and measures, and to facilitate commercial transactions, his Majesty's Government should be asked to make the metric system compulsory. The Education Committee of the council is in agreement with these views, and has recommended:—"That the council is of opinion that the time has arrived for the compulsory introduction of the metric system; that a communication to this effect be conveyed to his Majesty's Government; and that the council be recommended accordingly."

A BOOKLET describing the facilities for study provided by the various departments of the Imperial College of Science and Technology can be obtained on application to the secretary of the college. The guide was drawn up in the first instance specially for headmasters and science masters of schools and for colleges. It has been re-issued to provide persons anxious to have information as to the industrial careers for young men to which the Imperial College is specially directing its attention. The number of posts of an industrial character, in which high scientific education is of great importance, is constantly increasing throughout the Empire, and the Imperial College should after the war attract an ever-increasing number of students. We have also received separate parts of the calendar of the Imperial College, giving complete prospectuses of the associated colleges of the Imperial College, namely, the City and Guilds (Engineering) College, the Royal College of Science, and the Royal School of Mines.

IN August of last year the London County Council resolved that, subject to the establishment at the Imperial College of Science and Technology of a department of technical optics under a separate head; to the Government grant to the college being increased in respect of such department; and to certain other conditions, the council's grants to the college be increased in respect to technical optics by an amount proportionate to the increase in the Government grant as 1:3; provided that the increase in the council's equipment grant shall not exceed 750*l.*, and that the increase in the council's maintenance grant shall not exceed 1000*l.* a year. The governing body of the Imperial College has now informed the council that it has adopted the recommendation of its Technical Optics Committee—which is also the Advisory Council for technical optics—that Mr. F. J. Cheshire be appointed director of the department of technical optics for a period of five years commencing June 1, 1917, at a salary of 1000*l.* a year. The Education Committee of the council, at a meeting held yesterday, recommended that this appointment be approved.

WE have received from the office of the *Field* and *Queen*, Breams Buildings, London, E.C.4, a copy of the English edition of "British Universities and the War: a Record and its Meaning," a little book compiled at the request of several correspondents in the United States who expressed the wish to have some permanent record of the response by the universities of the United Kingdom to the country's call for volunteers. The sixteen brief contributions by the vice-chancellors, principals, and masters representative of the various universities form an inspiring record of noble endeavour on the part of our university men; and to these unadorned statements of patriotic sacrifice and accomplishment Mr. Fisher, the President of the Board of Education, has contributed a gracefully appropriate preface. "No line," says Mr. Fisher, "can be drawn between student and teacher, between young and old. Many of the most brilliant teachers in the country have given their lives on the battlefield; many a bright star in the firmament of science has