

American universities or government laboratories. The magnitude of this effort may also be gauged by the fact that the annual budget of the Sugar Research Foundation has been well over 500,000 dollars for the past three years. A perusal of the research projects shows that marked emphasis is being put on nutritional and physiological aspects of research on sugar. Dr. Hockett, in his preface to the report for this year, gives a reason for this when he reminds his readers that the sugar industry is one of the largest of the food industries, and that sugar, grown either as cane or beet, provides more calories per acre than any other foodstuff.

Since it is a function of the Sugar Research Foundation to develop the potential of sugar as a raw material for industry, several topics dealing with the production of chemicals from sugar are included in the projects being studied. It is interesting to note that one derivative of sucrose, allyl sucrose, shows marked promise of usefulness as a varnish-type coating possessing high resistance to solvents and temperature. The importance of the fermentation of sucrose and molasses is recognized, inasmuch as several projects deal with fundamental studies on the growth of various micro-organisms on molasses and on organisms which produce fats from carbohydrates. Enzymes, such as invertase, receive special attention. Of the topics dealing with physiological aspects, that dealing with the absorption of sugars (glucose, fructose and sucrose) from the stomach and small intestine would seem to be of considerable importance; it is found that, contrary to 'orthodox physiology', there is a marked difference in the behaviour of these three substances in the stomach, so much so that diabetic patients fed on a sucrose diet can tolerate more carbohydrate than those fed on a glucose diet, and it was found possible to reduce the insulin requirements of the former group. Use is also being made of radioactive elements in studying the decomposition of sugars in the animal body and in investigating the formation and degradation of sucrose in plants.

In carrying out its function of disseminating information on sugar, the Sugar Research Foundation has rendered an invaluable service to workers in the sphere of carbohydrate research by the publication of its scientific and technological reports, which so far have reviewed seventeen important fields of study.

## FOREST RESEARCH IN SWEDEN

THE reports of the Forest Research Institute of Sweden for 1948-49\* contain some interesting articles, among which may be mentioned: "Solid volume in stacked pulpwood of pine and spruce (length of sticks 2 and 3 metres) and the volume of solid rough wood (with bark) in relation to stacked volume", by Bo Eckland; "Studies on the biology of the Phacidiid blight (*Phacidium infestans*, Karst) and its prevention", by Eick Bjorkman; "A quick method of determining the germinality of pine and spruce seed", by Lars Tirén; "The sensitivity of some wood and meadow plants to sodium chlorate",

\* Meddelanden från Statens Skogsforskningsinstitut. Band 37, 1948-1949. Pp. 676. (Stockholm: Statens Skogsforskningsinstitut, 1949.) 14 kr.

by Ake Domeij; and "The National forest survey of the province of Kopparberg carried out in 1933 and 1934", by Erik Hagberg.

There are two other papers which are perhaps of considerable professional interest to British Empire foresters. The first is by Ake Wiksten, "On some factors of importance for the sowing result and preliminary results from some experiments with covered patch sowing". The author discusses this investigation as follows. When sowing is carried out in places that are to a particularly high degree exposed to a scorching sun and withering winds or in which the structure of the soil is of a quality likely to conduce towards soil-lifting through frost, special arrangements should be made in order to mitigate the influence of the damaging phenomena. The best sowing method from a physical point of view is termed covered patch sowing and is carried out in the following way. The humus cover is removed and the surface of the mineral soil is scraped clean, after which the seeds are spread and the seed spot is trodden smooth. It is afterwards covered with a layer one-fifth of an inch deep ( $\frac{1}{5}$  cm.), consisting of a suitable organic material, for example, ant-hill litter, peat litter (peat moss), powdered mud-peat, rubbed humus or sawdust; as an alternative, spruce branches, or branches of a similar covering capacity, can be used as cover. The investigation has shown that this type of cover affords a good protection against drought. Thus when sawdust or ant-hill litter was used, the number of plants per seed spot showed a considerable increase (60-100 per cent). The results of the investigation should prove of considerable advantage when sowings of this type are made in tropical countries.

The other paper, entitled "The distribution of the valuable broad-leaved species over site classes in Halland, Skåne and Blekinge according to the national forest survey 1945-1946", is by Charles Carbonnier. This investigation is based on a national survey of the forest regions which has been already made, the aim being to study the distribution over site classes of stand types containing oak, beech and ash in Halland, Skåne and Blekinge. The results can, on one hand, give rise to certain conclusions concerning the question as to how far the site requirements of the various tree species can be considered to have been met, and, on the other, form the basis of a discussion of the general conditions prerequisite for the production of valuable broad-leaved species within the area investigated. The main results of the investigation may be summarized as follows. (1) The site requirements of beech and ash seem to have been reasonably well fulfilled. Their appearance seems to be chiefly bound to good soils. (2) Oak appears with approximately the same frequency in all site classes. It is most weakly represented in site class 1, however. (3) Fully half the areas covered with oak in pure stands and mixed with birch are accounted for under wooded-pasture land. (4) The distribution by area of the various site quality classes over stand types indicates that there is room for an extended production of valuable broad-leaved species within the higher site classes.

The Forestry Commission has been undertaking a national forest survey in Great Britain. In the interests of extending the areas of the valuable hardwood species of the country, an investigation in the suitable hardwood areas of Britain on the lines of the one carried out by Charles Carbonnier in Sweden should prove of high importance and value.