During the past year, the Fund's laboratories have been occupied with work on carcinogenesis, hormones, mammary cancer and the chemotherapy of cancer. The study of the relation of the metabolism of sulphur to the occurrence of cancer has indicated that disturbance of sulphur metabolism impairs carcinogenic activity, the inhibition of sulphur metabolism being parallel to inhibition of carcinogenic activity. This work has also indicated that sulphur plays no part in the elimination of carcinogenic substances. The results obtained are in harmony with the hypothesis that a primary action of carcinogens is their fixation to unknown sulphhydryl-containing constituents of the cell.

Work on mammary cancer has included a study of various methods of administering the milk agent and experiments on the recovery of Bittner's factor from milk taken from the stomachs of sucking mice fed by high-cancer strains. Further work has been done on the tumour-inducing activity of dried mammary cancer tissues from mice of several high-cancer strains and on the interaction of formative stimuli on mouse mammary of high- and low-cancer strains.

The caloric intake of the host influences the development of spontaneous and transplantable tumours; and dietary restriction inhibits the development of mammary tumours in mice of high-cancer strains. In some instances, this happens even after oestrogen treatment. Because many substances are now available, especially thiourea and its derivatives, which block the synthesis of thyroxine and therefore lower the basal metabolic rate, causing also hyperplasia of the thyroid, it seemed possible that substances of this kind might exert on the development of mammary cancer an effect similar to that produced by dietary restriction. Preliminary results of investigation of this hypothesis indicate that thiourea administered in drinking water to mice suffering from cancer inhibits, or at least delays, the appearance of mammary tumours in these mice. The way in which thiourea exerts this effect is being studied.

Chemotherapeutic work has included studies of the possible therapeutic value of large numbers of pure chemical substances; but no substance has yet been found which exerts a specific effect upon cancer cells. Substances are known which induce hæmorrhages in tumours. Among these are polysaccharides extracted from bacterial filtrates and the alkaloid colchicine. Colchicine also arrests cell division at the metaphase by preventing the formation of the mitotic spindle. Work in the Fund's laboratories has, however, failed to inhibit mitosis of malignant cells without also inhibiting at the same time the mitoses of other cells. Further study of this action of colchicine seems, nevertheless, to be promising. The Fund's workers have also found that colchicine administered to mice with transplantable tumours causes extensive hæmorrhages into the tumours, followed by shrinkage of their size and sometimes by ulceration of their surfaces. In exceptional instances, complete regression of the tumour followed. The greatest effect was exerted on soft, highly cellular and rapidly growing tumours. Similar effects were exerted by bacterial filtrates. Study of the action of pellets of stilbæstrol, which were introduced subcutaneously, upon tumours the sensitivity of which to colchicine had been determined, showed that stilbæstrol did not influence the growth of these tumours unless it was given in doses which were toxic to the animal. The report discusses each of these lines of work in further detail.

There has been, during the year 1945-46, an increase of £5,531 in subscriptions, and the Fund has received in legacies a greater sum than that contributed in this form during any previous year. Many of the staff have been away on war service, so that less has been spent upon wages, salaries and equipment; but wages and salaries are now higher than they were and all costs have risen. The increased activities of the coming year will, therefore, involve greater expenditure. The Fund, which seeks not only to remove one of the greatest scourges of mankind, but also to contribute fundamental facts to our knowledge of the biological basis of disease, is worthy of every means of support. G. LAPAGE

FOOD CONDITIONS IN OCCUPIED POLAND

A RECENT publication dealing with Polish problems* presents an attempt to assess "the wartime diet of the different categories of the population of Poland so as to obtain an approximate picture of the dietary needs of the population and to plan a food relief accordingly". It was published before the War ended and the assessment had to be made on incomplete information, but the probability is that the actual situation was even worse than appears—at any rate for the urban population.

The information used was that published by the German authorities themselves regarding the official food rationing system in occupied Poland. Where official information was not available, no detailed analysis was attempted; but an outline of the position is given so far as it could be judged.

Pre-war, Poland was chiefly engaged in agriculture, and prior to the overrunning of the agricultural areas in Western Europe, the Germans clearly hoped to draw good food supplies from this, the first of their occupied territories. All their planning was directed to this end.

The occupied territory was divided into two parts. That in the West (Wartheland) was incorporated into the Reich, and the remainder was classed as the "General Government" area. Food rationing and living conditions in general differed in the two areas.

In Wartheland, Polish farmers were expropriated and replaced by German colonists, and plans were drawn up for an increased agricultural production. Food regulations were detailed and seem to have been put into practice with great thoroughness. Germans, Poles and Jews were issued with ration cards of different colours and the distinction was emphasized in many other ways. The amounts obtainable on the ration were varied from period to period but were always highest for Germans and lowest for Jews; differences in quality were given a similar distribution: for example, wheat bread was given to Germans, Poles received adulterated rye bread; Germans received butter for their fat ration, Poles received rape-seed oil. The greatest distinction, however, arose from the fact that the Germans received frequent supplementary allocations of food which were not issued to the Polish population, many articles of food being forbidden to the Poles altogether.

In the General Government area conditions were much worse as, in addition to the above regulations, separate shops for the Germans were set up. These

* Analysis of the German Food-Rationing System in Poland by Leon Dmochowski. Pp. 92. (London: Polish Ministry of Labour and Social Welfare, 1944.)

shops were officially supplied with food stocks for distribution; but there was no official system of allocation to the Polish shops, the population merely being notified in the newspapers of the days when food could be obtained for certain types of coupons. Furthermore, local food officials were given powers which enabled them to keep the population very much at their mercy, and there seems no doubt that in many cases official rations were theoretical rather than actual.

Even bread and potatoes were restricted, and the official rations must have represented very nearly the total amount of food that could be obtained. The only possibilities of supplementation (in the towns) seem to have been by allotment produce and by purchase in the 'black market'. The limited free space in the towns meant that not many people could derive benefit from the allotments scheme, and the 'black market' as a source of food was naturally limited to those with money or valuables to offer in exchange.

In the rural districts the situation would not be quite so bad; but the strict regulations enforced on the agricultural population must certainly have resulted in a shortage of food. Farmers had to supply a definite quantity of foodstuffs per unit area to the village co-operatives, and without a card certifying that this amount had been supplied were unable to obtain agricultural implements and other necessary requisites. Since the German authorities were pressed to obtain as much food as possible for export to the Reich, we can be quite sure that these quotas would be set as high as the local officials dared place them. Cattle, sheep and poultry were all registered and kept under strict control.

Despite German efforts, food production declined. But exports to Germany continued, over and above the compulsory feeding of the military and civilian army of occupation. This was chiefly possible because of the plan that the Aryan Polish population should be allotted only half the German ration and the Jews only one-quarter. The number of ration cards issued in the Warsaw ghetto show another way in which food 'surpluses' became available. In 1941, 433,000 cards were issued; in 1942 only 40,000 seemed necessary.

The Poles did what they could to help each other, and the book gives details of the work attempted by the Social Welfare Committee. It was calculated that at least 1,188,000 people required immediate help in 1942. Help was only sufficient to aid 827,000 at the beginning and this number dropped to 199,000 at the end of the year. The food available for distribution by the Committee would yield about 274 calories per head per day (if distributed among 200,000 persons).

Prior to 1941 the Social Welfare Committee was permitted to receive aid from abroad, and children were given first call on the food so obtained. After the attack on the Soviet Union this aid ceased, and in 1942 the German authorities closed down the distributing centres, and the food stores which had been collected for relief work were taken for feeding adults engaged in war industry.

The following table shows the calorie and total protein values of the official food rations in 1942 in Wartheland (in the General Government area the values were lower, and for Jews in any area very much lower). In 1943, these values fell lower still and in 1944 the heavy fighting which took place over a large area of the country must have made the food situation even worse.

Age group	Calories	Total protein
Children up to 3 yr.	1267	41 gm.
3-10 yr.	1455	44 "
over 10 yr.	1642	46 "
Adults	1598	42 "
Pregnant and nursing mothers	1598	42 "

Full details are given of the bases of the assessments, and calculations for other nutrients and for various groups of the population are included. The book also contains a section devoted to proposed measures for post-war relief.

In the introduction it is stated that "the application of a food policy based on human needs . . . will contribute to the social welfare of the people, to the rise of the standard of living, improvement of national health and the development of agricultural and economic prosperity". Let us hope that Poland may be fortunate enough in the future always to have a Government willing to implement such a policy.

M. W. GRANT

A STUDY OF THE DIPTEROCARPACEÆ

DURING the advance down Malaya of the Japanese Army Colin F. Symington, forest botanist in the Federated Malay States, was under arms on the west coast of the Peninsula; and when the Japanese reached Singapore he managed to get away to the Dutch Indies and so to Australia. He was then posted to Nigeria where, to the great loss of forest botany, he died in 1943. He had left in Kuala Lumpur in final proof "A Forester's Manual to the Dipterocarpaceæ", together with material for more than a hundred plates from photographs prepared for its illustration. The Japanese discovered the text and caused it to be printed and issued as No. 16 of the *Malayan Forest Records*, using for proof-reading the services of two capable Government officers who were in their hands. Nothing was done with the materials for the plates; but it is understood that these will be published separately as soon as possible.

The "Manual" (pp. xliii + 244, with 114 text-figures) must be regarded as a progress report. It gives a forestry account of all the species (159) which the writer recognized. But it is incomplete without its plates; and no full review can be profitable until they have appeared. Meanwhile it will serve foresters who have local knowledge enough to be able to use it. Indeed it is for them that it has been prepared. The keys are field-keys, for use with sterile material. Also they make use of the ecological conditions under which the species grow, with the purpose that they should aid the inquirer in the forest. Leaves, stipules and fruits are shown in the text-figures; but the facies has been reserved for the plates.

One leading purpose the author has had—to stabilize the vernacular names so that work done through subordinates speaking Malay may be fully co-ordinated. This achieved, the greatest good will accrue to forest administration from the printing of the book.

A botanist will find in it valuable phytogeographic data and an ingenious diagram of altitudinal distribution.

Symington expresses a belief that relative stability has been reached in the nomenclature and grouping of the species. But has it? He has made so many changes in both that it would be premature to think that some of them will not be challenged.

I. H. BURKILL