

of efficiency, and terminable, apart from misconduct, only on grounds of inefficiency, abolition of the post, or lack of budgetary provision. The feeling of insecurity from which many members of the staff apparently suffer is not due only to the absence of proper staff regulations over the whole secretariat; it arises no less from the uncertainty of the political atmosphere and from the inconsistencies of national delegations. An urgent necessity in almost every department of the United Nations and the Specialized Agencies is a survey of the qualifications of temporary staff applying for permanent appointments, and all staff members should be given a definite decision either on the security of their jobs or on the date of their termination. The staff regulations of the United Nations also provide for filling vacancies by promotion rather than by an outside appointment, "with due regard to the maintenance of the staff on as wide a geographical basis as possible and without prejudice to the inflow of fresh talent at the various levels". All the awkward practical questions are left to be worked out; but most organisations have now developed a more or less clearly defined system of promotion. If these systems can be given adequate publicity, there should be less ground for dissatisfaction among those who might otherwise feel that their qualifications have been overlooked when senior posts fall vacant.

The broadsheet deals briefly with the general questions of co-ordination and notes the limited possibilities of interchange of officials between the United Nations and the Specialized Agencies, in spite of the undoubted advantages that a regular interchange would offer. The importance of staff consultation is also noted, but consideration of salary scales is deliberately omitted, important though this question is. Like some other matters which have been discussed, it bears closely on the important question of the morale of the secretariat staffs. This undoubtedly is not always as high as it should be; but even more than on the security factor, it depends on the conviction of each individual member of a secretariat staff that his job is worth doing. That, however, depends on the whole question of the functions of the secretariats and their relations with the policy-making bodies which are discussed in the second broadsheet.

Broadsheet No. 307 starts with a discussion of the general factors enhancing or limiting the influence which a secretariat may wield, and then examines in greater detail the part that can be played by a secretariat in the formulation of policy, in discussions at conference, in the preparation of budget estimates and in the execution of conference decisions. The broadsheet brings into clear relief some of the features which distinguish an international secretariat from a national Civil service, notably the fact that it serves a collection of governments, or government representatives, who lack a common tradition and a common outlook, and who meet infrequently. This situation affords a secretariat great scope for initiative, and it appears that many are already closely concerned in the making of policy. Here technical competence is a fundamental condition if the initiative of a secretariat is not to be ignored or regarded with suspicion.

The technical competence of an international secretariat, moreover, means not only efficiency in the usual sense but also the possession of a sound political judgment. *Planning's* observations on this particular point deserve careful attention from the

many scientific workers who are now in one way or other concerned with the activities of the numerous international scientific bodies. A secretariat, PEP remarks, needs to be keenly aware of the wider implications of any problem under discussion and to be able to judge whether a possible proposal or suggestion is likely to be generally acceptable to governments.

That is true at other levels, as is the observation that a secretariat may frequently be in the best position to suggest alternative priorities to its policy-making organ, if this means suggesting the postponement of agreed projects. Experience drawn upon in this study leads *Planning* to suggest that intuition is not enough to enable a secretariat to distinguish between rashness and boldness, between a passion for immediate results and a disciplined enthusiasm. In the field of science, it is probably true that more harm has been done through the failure to provide a proper secretariat at all than from undue initiative on the part of such a secretariat. International scientific conferences, moreover, have on occasion suffered through being served by extremely amateur secretariats. Experience of the numerous permanent international scientific bodies now in existence should also induce those scientific men with experience of them to endorse the concluding remark of the broadsheet, that competence and sound judgment can be developed only if they are consciously pursued as objectives.

OPENING OF MILK BOTTLES BY BIRDS

IN 1921 birds described as tits were observed to prise open the wax-board tops of milk bottles on the doorsteps in Swaythling, near Stoneham, Southampton, and drink the milk. This is the first known record of an act which has now become a widespread habit in many parts of England and some parts of Wales, Scotland and Ireland, and which has to date been practised by at least eleven species of birds.

The spread of the habit is interesting, because of the problems of behaviour involved. How far did the individual birds learn the habit from each other, or invent it for themselves? If most of them learnt it, by what process did they do so? How did, and how do, they detect the presence of food inside the bottle?

These are the questions which James Fisher and R. A. Hinde pose in a recent article in *British Birds* (42, No. 11; November 1949), and although the writers agree that proper answers to the questions can be obtained only from carefully controlled experiments on birds of known history, it is submitted that much useful information can be derived from the collection of facts about the spread of the habit from members of ornithological societies and from the general public.

Some four hundred records have already been obtained about bottle-opening by species of tits, while to a lesser extent observations have also been made with house-sparrows, blackbirds, starlings, robins, chaffinches and hedge-sparrows.

Occurrence of the habit is naturally limited primarily by whether or not milk is distributed in bottles in the district. There is, however, good evidence in many cases that the habit may not develop in a district for several years after the use of bottles has become almost universal there—it is known to have been the case in at least twenty-

three out of thirty districts where the year in which milk bottles were actually introduced is more or less accurately known.

Most British tits, and certainly the British species known to open milk bottles, namely, the great tit (*Parus major*), the blue tit (*P. caeruleus*) and the coal tit (*P. ater*), are resident and do not normally move, even in winter, more than a few miles from their breeding place. It would seem, therefore, that new centres and records more than fifteen miles distant from any place where the habit has been recorded previously probably represent new 'discoveries' of the habit by individual birds. The distribution of the records is consistent with the view that the new source of food was actually discovered *de novo* by only a small proportion of a local tit population and then passed on in some way to other individuals. In England and Wales, it seems likely that the habit has arisen *de novo* at least once per vice-county and may have arisen more often than this. It might be argued that the pattern of distribution of the observations reflects simply the view of the observers. In densely populated areas there are, of course, more observers; but there are, similarly, more milk bottles. Further, there are many densely populated areas from which no record of the habit has yet been received or from which negative records have been received. Moreover the time interval between the introduction of milk bottles and the first occurrence of the habit makes this argument unsound. The evidence that the area in which the habit occurred, as well as the actual number of records, increased more rapidly each year, is enough to support the view that when the habit has been acquired by one tit it can then be spread through the population by some form of imitation or learning.

Many observations have been made about the actual method of opening the bottles. Although the habit occurs throughout the year, it is more prevalent during the winter months than in the summer. This may be due to the increased need which the birds have for fats during severe weather; but many observers record that tits are much more common in winter in urban areas than they are in summer, and this is of importance. The bottles are usually attacked within a few minutes of being left at the door. There are some reports of parties of tits following the milkman's cart down the street and removing tops from bottles in the cart while the milkman is delivering milk to the houses. The method of opening the bottles varies greatly. When the milk bottle is closed by a cap of metal foil the bird usually first punctures the cap by hammering with its beak and then tears off the metal in thin strips. Sometimes the whole cap is removed and sometimes only a small hole is made in it. Cardboard caps may be treated in a variety of ways. The whole top may be removed, or only the press-in centre, or the cardboard may be torn off layer by layer until it is thin enough for a small hole to be made in it; the milk may be taken through this hole or the bird may insert its beak in the hole and flick off the remainder of the top. The records show that several different methods may be used in any one district, and that more than one method may be employed by one individual.

In many areas bottles containing milks of different grades are distinguished by having caps of different colours. No less than fourteen observers who had milk of more than one type delivered at the house reported that the tits attacked only bottles of one

type, and four others reported an almost invariable preference for one type.

Without experimental evidence it is impossible to decide which senses are of use to the bird in indicating the presence of food. Several correspondents have found that bottles filled with water or even empty bottles are still attacked; but this conveys nothing if the previous history of the birds is not known.

To what extent it would be correct to refer to the behaviour of those individuals which 'invented' the habit for themselves as 'insight learning' is a problem which cannot be resolved with the present inadequate data.

T. H. HAWKINS

NEW "BRITISH STANDARDS" IN AGRICULTURE

THREE booklets* have recently been published by the British Standards Institution, each of which specifies standards in a particular field of agriculture. The first booklet, "Sampling Milk and Milk Products", was originally published in 1938; but improvements in sampling technique have made necessary a revision. The new version of the Standard emphasizes strongly the difficulty of obtaining an adequate sample of a bulk of material, especially if the bulk consists of a large number of small packages. Careful attention to details of the sampling is essential if the analytical results based upon the samples are to have any validity. Standard 809: 1949 describes the techniques for obtaining samples from milk, cream, butter, cheese and other milk products, but is not concerned with the methods by which these samples are to be tested. That it contains no reference to the statistical aspects of the problem of sample selection is surprising; for example, rules are given for the extraction of small samples from cheese, but no mention is made of the admittedly difficult problem of ensuring that the sample shall give an unbiased and reasonably precise estimate of the qualities measured.

The second booklet specifies performance tests intended to ensure a high standard for rubber used in milking machines, without placing restriction on the type of rubber, and to encourage uniformity between successive batches of rubber parts. The present version of Standard 1578: 1949 relates only to natural rubber; but it is intended to include synthetic rubbers in a revised version as soon as sufficient experience of them has been gained.

The increasing interest in the use of vitamin D₃ solutions for the enrichment of poultry mashes has made desirable the specification of standard solutions suitable for incorporation in poultry food. The new Standard 1581: 1949, "Vitamin D in Oil for Poultry Feeding Purposes", recommends a sampling according to British Standard 627, followed by a biological determination of potency according to British Standard 911, in order to ensure that the vitamin D₃ content shall be either at least 200 B.S.I. units, or at least 400 B.S.I. units per gram. The Standard also describes the procedure to be adopted in the determination of acidity, for which an upper limit of 2 per cent (expressed as oleic acid) is specified.

D. J. FINNEY

* Sampling Milk and Milk Products (British Standard 809: 1949). Pp. 20. 2s. 6d. net. Rubbers for Milking Machines (British Standard 1578: 1949). Pp. 8. 2s. net. Vitamin D in Oil for Poultry Feeding Purposes (Types 200 and 400) (British Standard 1581: 1949). Pp. 10. 2s. net. (London: British Standards Institution, 1949.)