of certain lead alloys for pure lead have not so far resulted in any decisive improvement and, although the use of other materials such as thermoplastic synthetic resins has been suggested, no satisfactory substitute for lead sheathing has been found. Laboratory tests show that the addition of silicates, phosphates, chromates, tungstates and molybdates reduce the plumbo-solvency of ground-waters, and since 1931, attempts have been made to make practical use of this fact by the incorporation of sodium silicate in the petroleum jelly used as a lubricant on cables. As a result, in localities where corrosion is mainly chemical, there has been a considerable increase in cable life.

As regards the corrosion of wires in telephone exchanges, Dr. Radley mentioned instances in which extensive failure occurred in unattended rural exchanges within a period of ten years. It is difficult to propound a theory accounting adequately for this corrosion, but humidity, the presence of electrolytes in the insulating wrappings, and potential differences between wires that are touching are contributory factors. Variations of atmospheric humidity are inevitable in exchanges of this type despite air conditioning, and under certain conditions condensation of moisture may occur on parts of the apparatus. Electrolytes are present in all cotton wrappings, but it has been found that they can be eliminated to some extent by washing the wrappings. The practical value of this process is under investigation. Cellulose acetate and acetylated cotton have a lower ash content than cotton and are used as the inner wrappings in place of natural silk.

In the course of the ensuing discussion Mr. J. S. Forrest gave some examples of corrosion of overhead power lines, Mr. Clarke discussed the effect of oxygen in solution on the rate of corrosion, and Mr. A. B. Winterbottom made a mainly mathematical contribution on the use of an optical method for the study of film formation.

SEX EDUCATION: AIMS, POSSIBILITIES AND PLANS*

By CYRIL BIBBY

WE come now to what many people will regard as the crux of the matter—when the appropriate facts have been encouraged, what may we expect to be the outcome in terms of sexual behaviour? What, indeed, do we *wish* to be the outcome?

We have to recognize that in Great Britain to-day there is a wide divergence of opinion on questions of sex morality, and in particular, on the question of pre-marital intercourse. For those of our fellows who accept the Church's teaching in its entirety, no queries will arise about the validity of the marriage institution. But increasingly young people are demanding some other justification for it, and those concerned with sex education must either find the justification or honestly admit that they know of none. I believe, however, that the search is not a very difficult one.

Those who see no intrinsic evil in sex may well feel that in a new Utopia the institution of marriage would have no place, that sex relations would be so governed by universal harmony that any contractual basis for living together would be quite unnecessary. But we are not living in a Utopia of perfect beings,

and most of us, I imagine, feel that in our present society the married state has a good deal to be said for it.

I believe, however, that a disservice is done to the cause of sexual morality by those who fail to recognize any gradation in standards of behaviour, and lump together all types of pre-marital intercourse under the omnibus title of 'fornication'. I feel some impatience, moreover, with those who seek by their statements to convey the impression that young people to-day, in contrast with the virtuous youth of their own generation, are sunk in sexual vice. It might restore them to a sense of perspective were they to read the words of Aleuin of York, written before ever William of Normandy set foot on these shores. "Since the time of King Aelfwold . . ." he wrote, "the land has been absolutely submerged under a flood of fornication, adultery and incest, so that the very semblance of modesty is entirely absent." Substitute the name of any recent monarch, and there is the gist of many a modern lamentation.

Fulmination, I feel, is a good deal less effective with young people than reasoned argument. It is my experience that the much maligned youth of to-day *will* pay some attention to the views of a sympathetic adult who seeks to persuade them that not all conventions of sex behaviour are hypocritical and not all restraints puritanical. Let us not delude ourselves, however, that even with the most reasoned arguments in the world, all pre-marital sex relations would disappear. No amount of mere talk will of itself dam up the sexual urge of lusty youth. Far-reaching social changes are needed too, and among them is the removal of the all-too-many barriers to early marriage. Equally important is the need to give young people the feeling that they have some future and that there is something for which it is worth while to postpone their sexual satisfaction; to assure them that there is something that they can give to society and which will give them an honoured place in it, to inspire in them some burning sense of constructive social purpose.

One last word about my suggested definition of aims. I stated that sex behaviour should be according to a rationally determined code, but I do not prophesy what that code will be. It would be possible for us so to condition each new generation that it almost automatically thought and felt as its rulers desired: experiment along these lines achieved some considerable degree of success during the last twelve years in Nazi Germany. But, for me at any rate, no such reflex subservience to an authoritarian moral code is included in the aims of sex education. I am content to teach the facts as well as may be, to encourage an open and healthy attitude to sex, to insist on the need for determining conduct rationally—and to have faith that a generation so educated will be at least capable of taking correct moral decisions and making correct moral judgments.

When we leave the definition of aims and begin to draw up definite plans for action, there are, it seems to me, several dangers that must be avoided.

The first is that of Utopianism. There is a great temptation in sex education, as indeed in education generally, to draw up magnificent schemes that are totally irrelevant to the particular social setting within which they are to be put into practice. Let our plans, therefore, be impregnated through and through by an appreciation of what is possible and desirable here and now, not what might be in a brave new world.

* Continued from page 414.

The second danger is that of wasting energy on barren argument about whose job sex education is. For too long parents and teachers and medical practitioners have been, to use an Americanism, 'passing the buck' to each other. Sterile disputation about the precise allocation of degrees of responsibility must give way to serious preparation for getting on with the job in hand and to close collaboration between all who have any part to play.

Another danger is that of over-emphasizing sex and isolating it from the rest of life. To this danger some of the early pioneers fell prey. The perhaps inevitable result of their determination to bring sex into its place in the educational picture was that they painted a canvas on which it loomed over-large. In their rightful insistence that children should not remain in ignorance, they tended sometimes to overload them with information beyond the bounds of their curiosity, intellectual ability or emotional understanding. This tendency must be avoided. Sex education, like health education and character training generally, should permeate the whole of life. The better it is, the less obvious it will be. It will just fit in naturally and inconspicuously into the ordinary life of home, school and community, and will be noticeable only to the degree to which it is imperfect.

Never has the mental atmosphere of the country been so favourable to sex education as now, and now is the time to crystallize support. Talks to public meetings, men's and women's guilds, educational and other discussion groups, and so on, should be arranged in each area. Radio talks, film shorts, posters, newspaper advertisements, etc., can be used to a similar end on a national scale. If this were done with energy and determination, I believe that all opposition to sex education, except that of the confirmed obscurantists, could be overcome within a very short period.

There is another immediate problem that needs mentioning. While we are perfecting our long-term plans and awaiting their fruition, our schools send out into the world each year vast numbers of children who have had no sort of reliable sex education. We cannot afford to be perfectionists and do nothing because we cannot do the best. As a temporary measure, therefore, talks on sex should be arranged in youth clubs and the like, and specially devised lessons given in the schools. But the sooner we get rid of this patchwork procedure, the better.

We must concentrate a good deal of attention on the education of the educators, so that a continuous scheme of sex education may be put into practice at the earliest possible moment. Long-term plans must include drastic alteration in school, university and training college curricula—but we cannot wait for that. Side by side with these changes must go the organization of immediate help to present parents, teachers, youth leaders, medical men, nurses and religious and social workers. What can be done to give such help?

I would agree with Charles Dickens when he wrote: "We thought that, perhaps, it is right to begin with the obligations of home, sir; and that, perhaps, while those are overlooked and neglected, no other duties can possibly be substituted for them"; and shall therefore consider parents first. Rosy optimism is worse than useless, and it must be recognized that many present parents are too ignorant to explain the facts of sex to their children, too indolent to remedy their ignorance, and too tangled in their emotional

attitudes to be able to do much were they very encyclopaedias of sexual knowledge. But not all present parents. Many are well informed and many others anxious to inform themselves. Many have a thoroughly healthy attitude to sex and many others are eager to attain it. With such there are great possibilities. Courses could be arranged for the parents of new entrants to the nursery or infant school, and perhaps again when their children pass on to the secondary stage. More systematic help and guidance could be given to expectant and nursing mothers at the clinics and welfare centres. The matter could be dealt with at village institutes, community centres, co-operative guilds and the like.

So far as teachers are concerned, it is reasonable to expect a much more thorough preparation. Most of what is needed to provide the necessary background to sex education should indeed be part of the normal professional training course. All teachers need an understanding of the child's bodily, intellectual and emotional development, and this can only be based on a knowledge of fundamental physiological and psychological principles. It would also be very valuable for teachers to have an understanding of the sexual behaviour and problems characteristic of children of various ages, and to study in more detail those of the age-range which they are specially preparing to teach. Moreover, since sex education in the school will be effective in proportion as sex education in the home is not neglected, teachers need also to understand something of the problems of home life and infant training. All teachers need also to be equipped with certain fundamental data which will enable them to answer adequately questions which happen to arise in their school lessons. This implies that all teachers in training—whether they are going to teach the functioning of living things or the structure of dead languages—should take a course in human and social biology. Some training is needed also in the technique of sex education. The ways in which the various subjects of the school curriculum may be utilized as media of sex instruction, the value of various extra-curricular activities in the development of character, the effect of the general school routine and tone upon the fixing of sex habits and attitudes—all these should be studied. Specialist teachers, such as biologists, will naturally need a still fuller preparation.

If it be objected that there is no time to study all this, so much the worse for the very inadequate period of training which is still considered sufficient for teachers.

In the future we may have such teachers, but there are few to-day. In the meantime, then, what can be done? Most present teachers of biology have the background which will enable them to pick up the necessary extra factual knowledge quite quickly, and many of them have the requisite personality. What is most needed in such cases is courses of instruction by specialists, dealing in part with those physiological and psychological aspects of sex which are not normally covered in university and training college syllabuses, and in part with the technique of sex instruction in the school. Such courses will not make first-rate sex educationists of all who attend them, but at any rate some of the teachers will then be competent to deal with the subject with their pupils, and the others will at least have some understanding of what is aimed at.

Now what of youth leaders? It is encouraging to note that the 1944 McNair Report comments that:

"There are three matters which are of great significance for young people—religion, politics and sex. They are certain to arise, sooner or later, in any discussions with boys and girls on social conditions or their own physical, mental or spiritual problems. Leaders must therefore be prepared to face them." When the county colleges envisaged in the new Education Act become a reality, they will presumably provide a useful channel for guidance in these matters. In the immediate future, we shall have to do the best we can under the present very difficult conditions of inadequately trained youth leaders, poor club accommodation and so on. The difficulty is, moreover, accentuated by the fact that most of the club members will have received little or no sex education in earlier years. Apart, therefore, from definite lectures to the young people themselves, such as were suggested earlier, the main advance must be that of giving a general background of knowledge to youth leaders, which will help them to deal more effectively with the problems of behaviour which always arise in youth work and to give helpful personal guidance to their club members.

We must recognize, however, that most young people spend only a few hours each week in their youth organization and the major part of their day-time at work. Parallel with what is done in the club, therefore, it seems essential to tackle also the environment in factory, shop and office. The co-operation of industrial welfare workers and of shop stewards and trade union officials should, therefore, be enlisted in any balanced programme of sex education work.

Now let us consider the medical profession. What part has it to play in sex education? The quite common opinion that medical men are peculiarly qualified to give sex instruction is, I suspect, an aftermath of the feeling that sex is in some way abnormal, and therefore to be handled only by medically qualified persons. This idea, I hope, is dying out rapidly and the role of the medical practitioner should be estimated without prejudice.

Any other than elementary instruction on the venereal diseases is clearly the medical man's province, as are other problems of sexual pathology; while a great deal of work in preparation for marriage, concerning the technique of intercourse, the practice of contraception and so on, is largely medical in nature. Medical practitioners also, particularly those specially concerned with the young child, should be able to give much helpful advice to parents.

But those medical practitioners who aspire to be sex educators will need to give careful study to the psychological aspects of sex as well as to its physiology; and they will need sociological insight too. Sex relations and marriage are not purely medical problems. Equally they are problems of politics and economics, of passion and of friendship, of intellectual companionship and mutual respect. Is it too much to hope that medical training might in the future pay more attention to these and other related matters? No doubt, as in the training of teachers, there is the difficulty of already overcrowded syllabuses. But would not some little study along these lines be of more value to the general practitioner and his patients than a painfully acquired familiarity with the fine details of human anatomy?

Other health workers, too, have a part to play. Particularly in rural areas, the district nurse and health visitors could do much to bring about a more enlightened attitude to sex among the parents with whom they come into contact. But to be really

helpful to the mothers they meet, they will in most cases need further preparation themselves. Having already a good background knowledge, it should be fairly easy for them to extend their understanding. In the future this extra field should be part of their training; for the present, special short courses should be arranged.

The question now arises: Suppose that all these different categories of people *do* attend special courses of instruction—will that guarantee their suitability to play a part in sex education? The answer, I suggest, is quite clearly 'No'. He who would undertake sex education with success needs many qualities which may bear little or no relation to special training or academic attainment. The first essential is personal sex adjustment and an absence equally of prudish disinclination to discuss sex and prurient tendency to discuss it to excess. In all education the teacher needs a sympathetic understanding of the pupils, but this applies with special force in sex education. Hypocrisy and narrow-mindedness are fatal. Honesty and tolerance are essential. Imagination is needed too—the ability to sympathize with the feelings of a child and to understand the perplexity of the adolescent, while yet retaining the mature judgment and emotional stability of the adult. One other quality I would add—that of a sense of humour. I know no solvent of strain more effective than laughter, and the person who cannot throw in a joke now and then has no place in sex education.

This is both a warning and an encouragement. It is a warning against judging people's suitability for sex education by their paper qualifications, and an encouragement to those thousands of good-hearted but modest folk in the street who wish to help in sex education but have been doubtful of their ability to do so.

It is now generally agreed that sex education should not be considered as an isolated subject; and its integration with the rest of education, it seems to me, has two main aspects. One aspect is that of sex education as part of health education generally, and the other is that of sex education as part of a wider education for family life.

There, surely, is a worthwhile task in which many organizations could play an important part. Could not sex education grow into something much wider and richer if really close collaboration and co-ordination were achieved between all the bodies doing sex education work, the moral and social welfare organizations, those concerned with marriage guidance and family planning, organizations dealing with heredity, eugenics and population problems, those working in the field of maternal and child welfare, and so on? This is obviously a matter requiring close and critical consideration by all the organizations concerned, and I commend the suggestion to their attention.

Among other matters which are simply crying out for attention is that of research. A very considerable volume of sex education work is being carried out—and, I venture to think, with some success. But we cannot close our eyes to the fact that it is all being done quite empirically. We have our ideas about the amount and degree of accuracy of the sex knowledge of the people we are trying to educate; but we have no exact knowledge. We have general impressions of what their attitudes to sex and sex behaviour are—but we have no exact knowledge. We make estimates of the relative efficacies of the various techniques of sex education—but again we have no exact know-

ledge. The securing of this exact knowledge should be high up on our list of priorities. Just how it should be carried out I am not competent to say—that would need the combined intelligence and experience of educationists, medical practitioners, psychologists, social workers, statisticians and field research workers.

People's attitudes to sex, like their attitudes to any other aspect of human life, do not crystallize in isolation, but are shaped and impregnated by the views of their fellow-citizens and by the whole structure of the society in which they live. That is why some enthusiasts for sex education live in a fool's paradise. Imagining that it is possible in a few lectures to overcome the influence of years of living in a society with distorted views of sex, they are due for disillusion. The best results will follow from sex education only when the whole of our society is remodelled, and our children grow up from the earliest days surrounded by adults who feel that sex is an excellent and joyous thing in which man and woman join as equal partners, sharing benefits and responsibilities alike. Meanwhile, our scheme of sex education must not be drawn up *in vacuo*, as if sex attitudes and sex behaviour were things fixed and immutable. If it is to be really potent, it must be sex education for our particular social setting.

FAMILY FOOD CONSUMPTION IN THE UNITED STATES*

A VALUABLE report has been issued* giving a detailed account of the analysis of data obtained in the United States during a large-scale inquiry into family spending and saving, of which food consumption returns formed a part. It also includes a useful discussion of the various techniques which can be employed in collecting data and the way in which choice of method may affect the picture given by the returns.

Since the United Nations Conference on Food and Agriculture focused attention on the responsibility of a government for the standard of nutrition in the area under its control, reports which describe in detail the way in which different countries conduct dietary surveys in their own territories should find a ready welcome.

The first essential is a basic stock-taking in order to obtain an over-all picture of the food resources of the territory and the nutritional requirements of the community. This provides the background against which more detailed surveys can be tested and on which plans for betterment can be based. There are, however, many territories for which such a simple balance sheet cannot yet be prepared, because the necessary basic data are not available. Imports and exports are usually known with considerable accuracy, but acreage under food crops and the yields normally obtained are not. In some areas there is no information regarding the total number of people forming the community, far less any details of the population distribution in terms of age, sex, and occupation. Without such information nutritional work can at best be only a patchy process, and is apt to be confined to the few more fortunate individuals who happen to come under observation.

A satisfactory balance sheet does not in itself ensure

that all is well. It assumes that food is being distributed according to need, and that is a thing which rarely happens. For this reason continual surveys are required in order to provide information about distribution and the factors which determine it. There is no simple way of obtaining this information, and all the methods so far employed have decided limitations. Clearly the smaller the unit that is observed, the greater the number of records which must be kept if the results are to be used as an indication of trends in the community as a whole. Yet if the unit consists of more than one individual, the possibility of maldistribution still exists.

Usually the family has been chosen as the unit for observation. Maldistribution of food may (and often does) occur inside the family; but it nevertheless represents a compact catering unit, and the individuals composing it are on the whole subject to the same controlling influences.

The present study has taken the family as the unit and it claims to represent "the entire civilian house-keeping population of the United States". The distribution inside the sample is said to check very well with census data, but all breakdowns are given in percentages, and the actual size of the sample does not appear to be stated. It would, however, have been possible to handle a very large number of budgets as no direct measurements were undertaken.

In the United Kingdom, the Ministry of Food has run a continuous "War-time Food Survey" in which the investigators have visited the families and supervised all weighings and record-keeping. Since one investigator cannot cover more than ten families at a time (visiting on alternate days during the survey week) the number of records that can be collected is limited by the number of investigators available. It is, however, a method which involves direct measurement and it also affords an opportunity of assessing the relative effects of other influencing factors.

In contrast to this, the present inquiry was conducted as follows:

"Each housekeeping consumer unit interviewed was requested to give detailed food information for the previous week as well as the information on income and expenditure for all goods and services for the calendar year 1941 and for the first quarter of 1942."

A food schedule was provided listing 177 food items, and the information sought was (a) food bought during the preceding seven days—quantity and price; and (b) food eaten during the preceding seven days—quantity (specifying whether home-produced, bought, or other), and price. Among additional information required was "the number of meals furnished from home food supplies in the seven days covered by the food schedule for each family member, boarder, guest, or paid helper in the household".

The chief criticism against conducting an inquiry in this way is that it is too much in the nature of a memory test, and is therefore subject to all the frailties of that human mental process. The authors are not unaware of this weakness; they themselves say:

"The method used in this study to obtain food consumption data is, of course, subject to some error. It is not expected that the homemaker can recall with great precision the exact quantities of each of the kinds of food consumed. There may be some understatement and some overstatement that is not compensated for within a single schedule. However, it is believed that in the averages for fairly large

* Family Food Consumption in the United States. (U.S. Department of Agriculture, Miscellaneous Publication No. 550.) Pp. vi+157. (Washington: U.S. Government Printing Office, 1944.) 20 cents.