

the organizations and individuals interested in herd improvement; it also provides statistical and other services for artificial insemination centres and collates much data for the various breed societies and others. In the field of artificial insemination the progress has been particularly striking. The number of cows artificially inseminated from Milk Marketing Board centres has risen from 6,401 in 1945-46 to no less than 431,402 in 1949-50. In non-Board centres the number inseminated in the latter year was 172,321, so that the total for the country is well over 600,000, that is, some twenty per cent of the dairy cattle in England and Wales are now served artificially by bulls of which the great majority are well above average quality.

The records quoted by Dr. Edwards show the rapid advance in numbers in recent years of the heavy-yielding Friesian (or Friesian-type) animals, which now form as much as 32 per cent of the total national herd. He also gave some interesting figures indicating fluctuations in herd fertility (disclosed by artificial insemination).

From Dr. Edwards's figures and conclusions, which are borne out by all recent experience, it is clear that, at present, the main limiting factor in milk production in many herds is not heredity but dairy farming technique, particularly in relation to grassland improvement and pasture management.

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## FILMS AND FILMSTRIPS IN FUNDAMENTAL EDUCATION

**P**RODUCED in collaboration with Unesco, four new educational pamphlets of Film Centre, Ltd., discuss the role of films and filmstrips in fundamental education. The first, "The Film and Fundamental Education", shows that the full development of the film in fundamental education must depend to a large extent on governments. The finance and the resources involved are considerable, particularly for production. But whatever the contribution made by governments, a very large measure of initiative still lies with non-official organizations of all kinds, especially in the field of film use.

In many areas where the population is scattered, mobile units are likely to remain the most effective means of showing films for some time to come. Since the equipment of a mobile unit costs several thousand pounds, the responsibility will continue to lie mainly with governments. Ultimately, however, mobile units must make way for static projectors in each community, if films are to gain a regular and accepted place in local life. At this point private organizations should be ready to play their part. Where an individual organization is unable to afford the cost of a projector, a co-operative film service, uniting a number of bodies or persons prepared to contribute, can provide projection equipment and skilled projectionists. The service is also capable of further extension to include training courses for its members, and even a film lending library service.

In this context the Film Councils, developed in Canada and the United States, provide a very relevant example. These Councils bring together local bodies of all kinds—youth clubs, women's institutes, churches, chambers of commerce, trade unions, industrial firms, farmers' groups and others—for a common purpose, to promote the educational use of the film. The

Ottawa Film Council, for example, has more than a hundred affiliated organizations. The main value of the Council is twofold. By the pooling of finances the resources available to the community can be very considerably increased. The fullest possible local participation is also ensured.

Popular initiative and use of co-operative methods are, in fact, the keys to success. In the last analysis, fundamental education can only be a living and creative movement if it is a movement of the people themselves, working together for the advancement of the whole community and with it the whole nation.

The second pamphlet describes the most suitable apparatus for the projection of films and filmstrips in fundamental education, while the third and fourth pamphlets deal with the choice and care of films and filmstrip in fundamental education.

## ACCEPTANCE SAMPLING

**A**T the first post-war meeting of the American Statistical Association, held in Cleveland, Ohio, in January 1946, an all-day session was devoted to statistical methods of acceptance inspection, and the proceedings of this session have recently been published\*. It is a pity that there has been more than four years delay in publishing this material, as its prompt appearance would have had a stimulating and clarifying effect. As it is, considerable further development of the subject has occurred, and the book is somewhat out of date. A good deal of it will make worthwhile reading, nevertheless, to anyone interested in industrial inspection.

The first half of the book is devoted to acceptance sampling by attributes. A short history of developments prior to 1941, by Paul Peach, is well written and good, except that no reference is made to British work (one has to admit, however, that not much British work had been published). E. G. Olds, in a review of war-time developments, gives clear descriptions of the various methods available (though the relations between them are not always shown up well) and has compiled a good bibliography. Then follows the most interesting feature of the book, a verbatim report of a long discussion on sampling by attributes. The seventeen contributors appear to speak from extensive experience and to have really thought about the subject; and their discussion is remarkably shrewd and to the point.

The second half of the book, devoted to acceptance sampling by variables, is less interesting. J. H. Curtiss applies the language of the Neyman-Pearson theory of testing hypotheses to deal with a limited range of problems arising with specifications of population mean. A short summary is given of a paper by W. A. Wallis on using measured values of a variable to estimate the proportion falling beyond some limit and classed as "defective", instead of merely noting the proportion of defectives directly; a full account has been published in "Selected Techniques of Statistical Analysis" (London: McGraw-Hill Publishing Co., Ltd., 1947). The ensuing discussion on sampling by variables, though it brings out some interesting points, rather flags by comparison with the first discussion. J. W. Tukey, as chairman, gives a good summing-up.

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\* Acceptance Sampling: a Series of Papers and Discussion on the subject of Acceptance Sampling delivered at the 105th Annual Meeting of the American Statistical Association at Cleveland, Ohio, on January 27, 1946. Pp. iv+155. (Washington, D.C.: American Statistical Association, 1950.)