



Utility
is
beauty

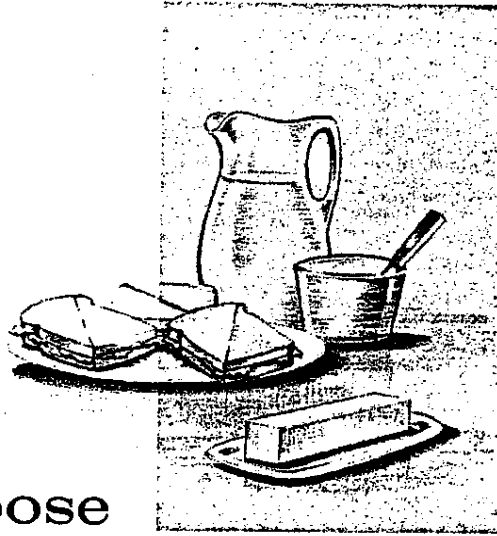


A statement of policy . . .

AMERICAN BREEDERS SERVICE, INC.
325 North Wells Street
Chicago 10, Illinois



Rockefeller Prentice
Chairman of the Board



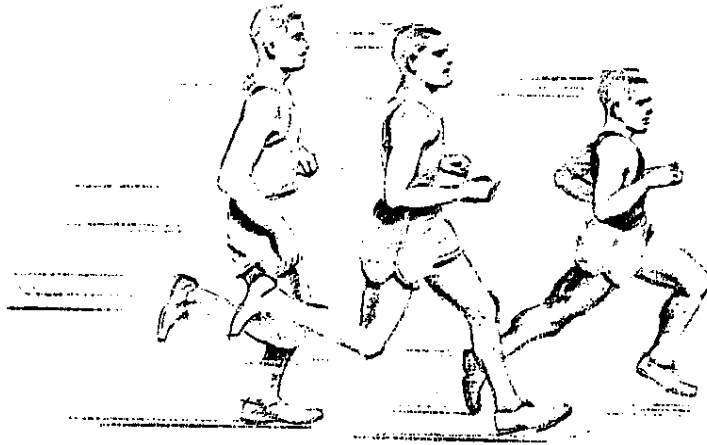
The main purpose

In selecting dairy bulls, the main purpose of ABS is the genetic improvement of dairy cattle for the more efficient production of human food. Genetic improvement of cattle is at best a slow process. Human population, on the other hand, is exploding at frightening speed. Notwithstanding present agricultural surpluses in this country, efficient production of human food may soon be one of our most desperate necessities for survival. From this point of view, we believe that type of dairy cattle is being over-emphasized without sufficient justification. The extent to which type is being emphasized more than necessary for efficient milk production, we will consequently call in this policy statement "superfluous type."

A paradox

Milk is produced by the functioning of internal organs and physiological processes which cannot be measured with any degree of exactness by external appearance. We know from experience, however, that external appearance is a safe, though rough, guide for distinguishing between an animal that may be expected to produce milk efficiently and one that may be expected to produce beef efficiently. It is probably this paradox that lies at the root of all type vs. production discussions.

Between the extreme dairy and the extreme beef types lies an infinite series of gradations. For efficiency in either milk or beef production, we must have a sound animal. In all type vs. production discussions, it is agreed or assumed that for good milk production we need a sound animal of the general dairy type. There seems no reason to believe that this animal could not and does not take numerous different forms in specific cases. The least common denominator of these forms has been referred to as "utility type."



Selection for utility

Utility type defies exact description perhaps for the very reason that the forms it may take may be so numerous — just as it might be difficult to identify by appearance, or describe by type, the athletes who would run a four-minute mile. By “utility type” we mean the sum total of external qualities that high-producing dairy cattle have in common that are of value in day-to-day milking operations. We reaffirm ABS’ long-standing policy to select dairy bulls whose near female relatives, particularly the bull’s daughters, have “utility type.”

Type as embodied in “ideal type” models and measured by classification ratings is a refinement of, and goes beyond “utility type.” Presumably “utility type” is included in “ideal type.” The following expression is given to clarify this use of our terms:



The idea of "ideal type" is probably very deeply rooted in habits of thought established through many centuries before the 20th . . . before the practice of keeping milk production records was introduced, when a cow's milk-producing ability had to be guessed by looking at her. This idea still persists today, probably for a number of reasons: It is still so deeply rooted; there is a true value in "utility type;" unquestionably "ideal type" has an extra value — currently — in the sale of dairy stock. Certainly the breeder can use the extra money that "superfluous type" may now bring him — a value to him independent of production. From that point of view, "ideal type" is not superfluous. *But it is superfluous in the sense that it does not feed populations;* and we question whether it will long even command additional price.

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Another paradox

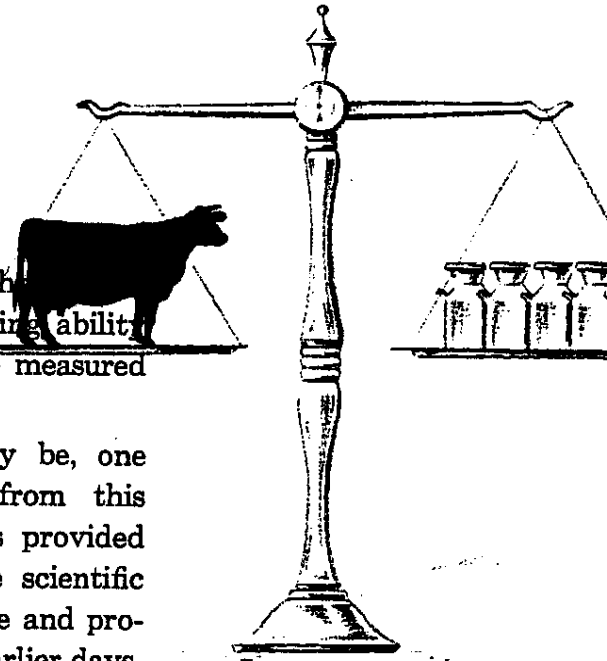
The 20th Century has witnessed the progress of two movements, hard to reconcile, except for the reasons just stated. We have seen the establishment and rapid growth of herd testing for production and herd classification for type — almost simultaneously. Stated another way, hardly do we start measuring milk production than we redouble our efforts to judge cows by appearance. It is hard to

believe that this can be solely for the purpose of estimating roughly the producing ability of dairy cattle which can now be measured accurately.

Whatever the explanation may be, one great advantage has accrued from this double-barreled program. It has provided a better opportunity for a more scientific study of the relation between type and production than was possible in the earlier days, when there was little lactation-period herd testing, and when score cards were overlaid with fanciful requirements as they were. It has been found, as a result, that the correlation between lactation production and type score is low, even when studied in cows in the same herd. As far as selecting parents for type as a means of improving production in the offspring, it has been said by respected authorities, "While there is no genetic antagonism between good type and high production, selection for type alone will have little direct influence on production, and, conversely, selection for production alone will have little direct influence on over-all type rating."*

In short, it has been well established that "ideal type" and "high production" are essentially independent of each other in the individual and that these qualities are also inherited independently.

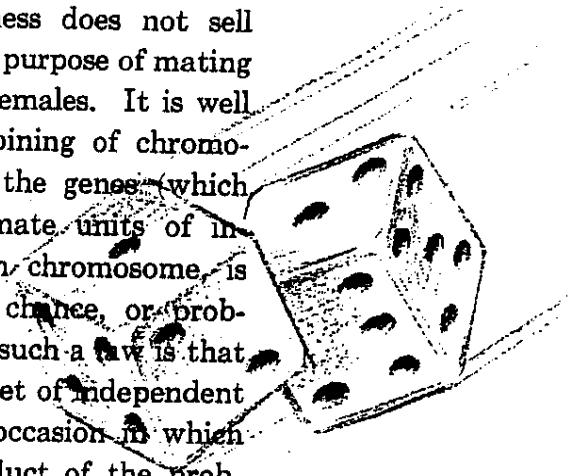
*"Breeding and Improvement of Farm Animals," by Prof. Victor A. Rice, Prof. Frederick N. Andrews, Everett J. Warwick, and Prof. James E. Legates, P. 440, 5th Ed., McGraw-Hill Book Company, Inc., New York 1957.



Laws of probability

A semen-producing business does not sell animals, but semen for the purpose of mating its males with the users' females. It is well established that the combining of chromosomes at mating, and of the genes (which are regarded as the ultimate units of inheritance) carried on each chromosome, is governed by the laws of chance, or probability. A fundamental of such a law is that the probability of all of a set of independent events occurring, on any occasion in which all may occur, is the product of the probabilities of a single event occurring.

To illustrate this in the case of only two characters in individuals, and without considering the probabilities which arise from chromosome assortments at mating: If one character were present in one individual out of 100, and the other, not correlated with the first, were present in one individual out of 300, the probability that these two characters would be present in the same individual would be $\frac{1}{100} \times \frac{1}{300}$, or $\frac{1}{30,000}$. (One chance in 30,000.) Similarly for three or more characters. But the problem is far from being as simple as this, for neither type nor production is a single "character," but is controlled by the interaction of many gene pairs. Thus the probability of getting high production and "ideal type" in the same individual is infinitely less than if each were a single character controlled by a single gene pair.



Genetic progress can be reduced ...or speeded up

The fundamental principle of probability has been amply demonstrated in the field of breeding. Research has repeatedly shown that selecting for more than one character at the same time reduces the rate of genetic progress that can be made with respect to each, and in proportion to the number of characters for which selection is being made.

A compromise program often proposed is to select for type and production, placing about equal emphasis on each. A proposal of this kind was recently put forward in the August 25, 1962, issue of HOARD'S DAIRY-MAN. Such a program is made to appear attractive by referring to it as "balanced," implying that you can breed for both "ideal type" and maximum production and achieve both at the same rate as though you were breeding for either alone. This is like holding out the tantalizing promise that you can have your cake and eat it. It is a matter of degree. You can have part of your cake and eat part. But it seems to us that the "balance" achieved is a compromise between a slow and a comparatively fast rate of genetic gain, as far as breeding for production is concerned.



Here we take our stand



ABS believes that the pounds of milk being sacrificed per generation by selecting for "ideal type" is substantial compared to the gain that could otherwise be made — that is, that faster progress in breeding for economically profitable milk production can be made by disregarding those qualities of physical appearance not related to production. It is ABS policy to do so, and to do everything in our power to de-emphasize "superfluous type," which, from what has been said, appears to be not merely superfluous, but a positive drawback to breeding for production. In line with this policy, and except where required by regulations, we will not hereafter publish type ratings on ABS Bulls or their female relatives or publish awards to ABS Bulls based in any way on such classification, nor will we take part in having them classified or in dairy cattle judging.

We believe it will be found that the present over-emphasis on "ideal type" may not have been so ideal after all, and that it will eventually pass, just as, in the commercial poultry business, the poultry shows and the "Standard of Perfection" for poultry have

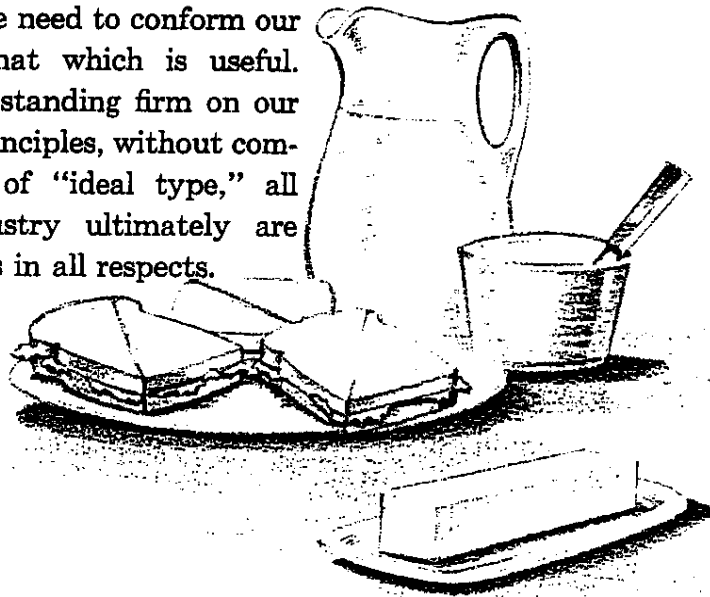
Sound genetics and integrity

To us the issue is a very simple one: Whether or not ABS is to maintain sound genetics and sound business principles, and integrity with respect to both. To us the fundamentals of sound genetics are selection for production and whatever type is necessary or useful for production — that is to say, “utility type” — each based on the best progeny test made available by research as it progresses. ABS was not the first by any means to suggest a progeny test — in fact, a suggestion for a progeny test (the daughter-dam comparison) was published very early in the present century. But the suggestion was not followed up on any substantial scale or systematic basis — except by ABS.

There is a vast difference between the paper suggestion of a progeny test for the selection of dairy sires . . . and the application of this test to the breeding of millions of dairy cows — the essential difference being

that a suggestion not carried out is of no use whatever, except perhaps academically. This was not an easy job for ABS or its distributors, in the face of higher costs and no little opposition. It is an accomplishment in which our users helped us, and which has helped them in return.

Our distributors and users have every right to expect that we maintain such reputation for single-mindedness and steadfastness of purpose as we may have earned through this accomplishment. This is not a time in history to occupy ourselves overly with surface or purely aesthetic values in dairy cattle. Rather we need to conform our ideas of beauty to that which is useful. Utility is beauty. By standing firm on our genetic and business principles, without compromise for the sake of "ideal type," all segments of our industry ultimately are bound to be the gainers in all respects.



Support of this ABS policy of breeding for production is found in many studies of breeding conducted by well qualified research workers. We list below three papers in which numerous others are cited:

1. N. D. Bayley, J. B. Parker, T. Heidhues, R. D. Plowman and W. W. Swett — 1961.

DAIRY TYPE: Its importance in breeding and management. Technical Bulletin No. 1240 — U. S. Department of Agriculture. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. — Price 15 cents.

2. G. V. O'Brien, L. D. Van Vleck, C. R. Henderson — 1960. Heritabilities of Some Type Appraisal Traits and Their Genetic Correlations with Production. Journal of Dairy Science — Vol. 43, No. 10, pp 1490-8.

3. R. G. Mitchell, E. L. Corley and W. J. Tyler — 1961. Heritability, Phenotypic and Genetic Correlations Between Type Ratings and Fat Production in Holstein-Friesian Cattle. Journal of Dairy Science — Vol. 44, No. 8, pp 1502-10.