

A System For Making Selective Matings

By W. A. WEEKS WITH AN INTRODUCTION BY TED PRESCOTT

A selective mating is nothing more than choosing the proper bull to mate to any individual female, with the object of producing a calf better than either of its parents. The master breeder has always done it by eye much as a good musician plays by ear. He knows instinctively what animals will blend harmoniously, just as the musician knows what notes sound well together, or the artist what colors will blend. Most of us, however, are not musicians, artists or master breeders. We make better harmony if we have notes to play.

Over 2,000 Holstein breeders to date have invested in a service known as "Analyzed Holsteins." The purpose of this service is to help breeders find the animals that have the best chance of blending harmoniously.

The basic idea of Analyzed Holsteins is simply to make a record of the precise places where an animal needs improvement. It uses the breed score card for its standard. The words in the score card used to describe the ideal animal are simply crossed out when they do not apply to the animal being analyzed. There are many points of type on the score card which have little significance, and these have been eliminated from the analysis forms. A unique card system has been developed for this purpose on which the faults of females are indicated by crossing out words, and the faults inherent in the analyzed bulls are punched out with an ear tag punch. It is thus possible to lay the sire card over any Analyzed female card and see at a glance which faults occur in both the male and the female and which probably would be intensified in the resulting offspring from such a mating.

We italicized the word "inherent" in referring to the faults of the bull, for the bulls are not analyzed on the basis of their own individuality. Two methods of sire analysis are employed. Sires with five or more milking daughters are analyzed on their daughters' conformation. If more than one out of the five are weak in the pastern and short in the fore attachment of their udders, the conclusion is that their sire is not prepotent for these two particular characteristics and they would be punched out on his card. The card shows the characteristics they can or cannot sire with fair consistency. Young bulls are analyzed on the basis

Qualities for PRODUCTION

Angularity, femininity, large size, relatively large body, general openness and freedom from excess tissue. Head clean-cut. Neck long and lean. Throat clean-cut. Brisket clean-cut. Dewlap clean-cut. Shoulder blades at the withers set smoothly. Withers wedge-shaped, well defined and rising above the shoulders. Vertebrae well defined. Hips well defined. Pin bones well defined. Ribs wide apart and well sprung. Rib bone wide, flat, and long. Barrel deep, and increasing toward rear. Flank deep, arched and refined. Thighs incurving from the side and wide apart from the rear. Skin of medium thickness, loose and pliable. Hair fine. Udder long and wide; quarters evenly balanced; texture soft, pliable, elastic, and well collapsed after milking. Veins on udder cleanly defined. Mammary veins long, tortuous, prominent and branching; milk wells numerous and large. Tail long and tapering.

Qualities for HEALTH

Animation, strength and vigor. Muzzle broad. Nostrils large and open. Jaw lean and strong. Eyes full and bright. Ears alert. Forehead broad between the eyes. Heart girth large. Foreribs long and well sprung. Chest floor wide. Back strong. Loin broad, strong and nearly level. Rump long and wide. Hips wide. Thurls wide apart. Pin bones wide apart. Barrel strongly supported. Udder well carried and of moderate depth; fore attachment strong; rear attachment high and wide. Teats uniform, of convenient size, cylindrical, free from obstructions, well apart, squarely placed, and plumb. Legs wide apart, clean-cut and strong. Fore legs straight. Leg bone flat and flinty. Tendons well defined. Pasterns of medium length, strong and springy. Hocks cleanly moulded. Feet short and well rounded; heel deep; sole level.

Qualities for APPEARANCE

Breed character, impressive style, harmonious correlation of parts, attractive carriage, and a graceful walk. Head medium in length. Forehead moderately dished. Bridge of nose straight. Ears of medium size. Shoulder blades at chest wall set smoothly. Top-line level. Back straight. Hips level with back. Pin bones slightly lower than hips. Tail held slightly above and neatly set between pin bones. Udder symmetrical, extending well forward, and floor reasonably level. Legs squarely set. Hind legs nearly perpendicular from hock to pastern; when viewed from behind, nearly straight. Switch nicely balanced.

FIG. 1.—Crossouts represent faults typical of the Holstein breed.

of the type of their dam and at least five of their paternal sisters. Strange as it may seem, this latter method has proven as reliable as that for the "proven" sire.

Analyzed Holsteins is a controversial and widely misunderstood service. One misconception is that it is a competitor of herd classification. Actually the two programs complement each other by attacking the same problem from two converging directions. Analysis tells you WHAT is wrong in precise terms, but makes no attempt to tell you HOW wrong. Classification tells you what is wrong only in general terms, its main purpose being to say HOW wrong an animal is by comparison with the breed ideal. The breeder needs to know the specific faults of his animals in order to avoid doubling them up in his matings. He also needs a record of how far these faults depart from the ideal. Analysis offers to organized arti-

cial breeding a tremendous opportunity for breed improvement by providing a sound basis for making selective matings. The Newman Holstein Farms at Culver, Indiana, which have developed an extensive artificial breeding business, are putting this program into operation. Its sires have been analyzed on the basis of their daughters, their dams, and their paternal sisters, and they are urging their patrons to have their females analyzed. Each patron is provided with a punched-out card on each of the sires available, and by comparison with his own female cards he can select the sire which would seem to "nick" best with each individual cow.

Curtiss Candy Co. Farms at Cary, Illinois have also been employing this general theory for several years, not quite so well developed in its application, but aimed at the same goal of avoiding the intensification of faults. They have had pleasing results.

Making Selective Matings—

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as she may fall above or below a certain desired level in overall type score.

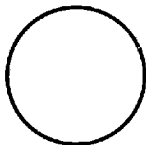
Needless to say, we must breed from the animals in our herds that are above the average level according to production and type records. We can go a little further and avoid mating animals both on the "sharp", or both on the "round" side of the ideal so far as their weaknesses go.

Doubling up from the "sharp" side in the matings we make, produces the narrow chested, poor rumped, crooked

legged, bad shaped, uddered cows we all have too many of. Doubling up from the "round" side breeds toward the coarse thick cattle that do not produce milk enough to suit us. Heifer crops like either one only remind us of the prize fighters who "zigged" when they should have "zagged." They don't amount to very much.

On the other hand, it is a pleasure to observe the results of matings where "round and "sharp" qualities have been carefully blended together, and the sires were strong for qualities where the cows were weakest. Actual

cases are shown on page 37. Other wonderful illustrations would include the Johanna Rag Apple Pabst-Triune Papoose Picbe and Oakhurst Colantha Abbekerk crosses; the Rock River Hengerveld Al-Marathon Bess Burke cross; the Hazelwood-Homestead cross; the Burke-Rag Apple cross; the Crescent Beauty-Admiral cross; and many other successful cases. Study of matings that have produced All-Americans, and the best cows in breeder's herds, usually shows this same pattern of selection at work in the breeding program.



THE ROUND SIDE



JOHANNA RAG APPLE PABST

Johanna Rag Apple Pabst had an inheritance which tipped the scales on the side of "round" characteristics. Check up on the JRAP matings at Mount Victoria which nicked best and you will find that they were with "sharp" foundation cows like Triune Papoose Piebe and Oakhurst Colantha Abbekerk.

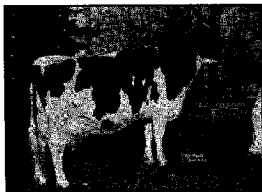


GET OF MONTVIC PATHFINDER
All-American, 1941



THE LAIRD OF DUNLOGGIN

The Laird of Dunloggin belonged to the "round" group—CPR and Colony Farms inheritance. The most successful nick in the Dunloggin herd was the result of breeding "Laird" daughters to Dunloggin Woodmaster.



DUNLOGGIN MISTRESS
LA PRINCESS



THE SHARP SIDE



TRIUNE PAPOOSE PIEBE

Triune Papoose Piebe, All-Time All-American aged cow, senior yearling and heifer calf, is on the "sharp" side of the scale. Mated with JRAP she produced Montvic Chieftain, and he sired Montvic Pathfinder, the two bulls that had the greatest influence on the Mount Victoria herd.



LASHBROOK PEARL ORMSBY

Lashbrook Pearl Ormsby, the dam of Dunloggin Woodmaster, was very much on the "sharp" side. When Woodmaster was mated to the Laird daughters they got La Princess, Grace, Gracious, and others that blended the sharp-round characteristics.

Other "Round - Sharp" Combinations That Nicked

Johanna Rag Apple Pabst	and	Oakhurst Colantha Abbekerk
Montvic Bonheur Abbekerk	and	Weber Burke Dusty Ju
Rock River Hengerveld Al	and	Marathon Bess Durke descendants
The Hazelwood family	and	North Star Joe Homestead
The Crescent Beauty family	and	Admiral Ormsby Forbes Descendants

Analyzed Holsteins is the brainchild of W. A. Weeks, Batavia, Ill., formerly a Holstein breeder in partnership with his father in Vermont, and also a former official classifier for the Holstein-Friesian Association of America. In addition to doing a vast amount of analyzing work, together with his colleagues in other sections of the country, Weeks serves as librarian for the organization, keeping up complete card files on all analyzed animals, and working out from the female cards the analyses of the bulls. He has had an unusual opportunity to observe the type characteristics of the breed in general and of many of the families within the breed. Out of this mass of detailed information he has developed some interesting theories which we have asked him to explain as a part of this article.

Figure 1 shows a reproduction of the old Analyzed Holstein form, no longer in use. She is the Average Holstein Cow. The crossed out words indicate the faults which are typical of the Holstein breed. These are the faults which are most difficult to breed out because they are weaknesses of the breed in general. Animals inherently strong in these particular characteristics, would, in general, be breed improvers.

Having given you these general thoughts about Analyzed Holsteins and the making of selective matings, we turn the linotype over to Mr. Weeks.

THE ROUND AND THE SHARP

Our National Breed Associations and Agricultural Colleges have learned and taught to us the sound general methods of breeding better dairy cattle. As Dean Rice of Massachusetts so clearly illustrates, the successful methods are (a) Careful line breeding, and (b) Outcrossing that nicks.

There are many rules to consider in making the bull selections required to make line breeding "careful" enough, and outcrossing that does "nick". One of these rules is that we must use bulls that have strong inheritance for qualities where our cows are weak.

The strong and weak qualities of dairy cattle may be illustrated by a triangle, a circle, and a wedge. (fig. 2) We know that in general we prefer dairy cows to be angular yet wide and strong, like the triangle. We know that strong, round cows lack the dairy tendency we want, and that sharp, narrow cows lack the health and constitution we need.

Just as the triangle is made up of some refined "sharp" areas and some

wide, open "round" areas, so our ideal dairy cow is made up of some "sharp" qualities and some "round" ones.

The question of what dairy cow qualities we want "sharp", and what ones "round", has been pretty well answered by breeder experience, dairy shows, testing and classification records. In general, things we want "sharp" are shown in Fig. 3., and

those we want "round" in Fig. 4. Combining the "sharp" and "round" qualities in the right places makes the sort of cow we want.

So weaknesses of a dairy cow are, in a way, being "round" where she should be "sharp", or "sharp" where she should be "round". A cow may be too much on either the "round" or "sharp" side of the ideal line, just

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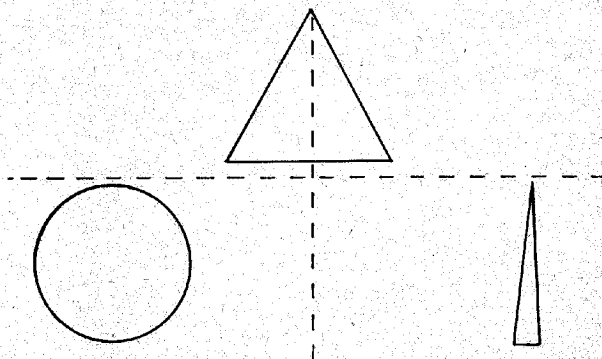


FIG.—Week's Theory of Round and Sharp Type.

From these two extremes, illustrated by a circle and a wedge, is blended the ideal cow of the breed, represented by the triangle, a combination of round and sharp characteristics. Like the gals in the song from South Pacific (There's Nothing Like A Dame) . . . "She's broad where a broad should be broad."

~~Head clean-cut. Neck long and lean. Withers sharp.~~
~~Ribs wide, flat, long and well sprung. Flank deep,~~
~~arched and refined. Thighs incurving. Skin loose.~~

~~Muzzle wide. Nostrils open. Forelegs straight. Chest~~
~~wide. Shoulders smooth. Loin broad, strong and level.~~

~~UDDER long and symmetrical, fore attachment strong,~~
~~rear udder high and wide, teats squarely placed.~~

~~LEGS squarely set and nearly straight, hocks cleanly~~
~~moulded, pasterns strong, feet short, heel deep.~~

~~RUMP long and wide, pelvic arch level, tail head neat.~~

FIG. 3—Crossouts represent faults of extreme sharp type. She tends to be slab sided, cut up in the flank, narrow in the muzzle, with crooked forelegs set too close together, narrow chested, rough shouldered, weak loined, with short and unsymmetrical udder, narrow in rear attachment, with poor teat attachment. Hind legs are crooked, cow hocked, and feet too long. Rump is short and pelvic arch sloping.

~~Head clean-cut. Neck long and lean. Withers sharp.~~
~~Ribs wide, flat, long and well sprung. Flank deep,~~
~~arched and refined. Thighs incurving. Skin loose.~~

~~Muzzle wide. Nostrils open. Forelegs straight. Chest~~
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~~RUMP long and wide, pelvic arch level, tail head neat.~~

FIG. 4—Crossouts represent faults of extreme round type. The ideal cow would have no crossouts. The "round" type is strong where the "sharp" is weak and vice versa. The "round" tends to be thick in head, neck and withers, ribs round and short. Flanks deep but thick and coarse, thighs thick, skin tight. Udder is well shaped but poorly attached fore and rear. Hocks are puffy and pasterns weak. She lacks depth of heel, width of rump and smoothness at the tailhead.