

America a Melting Pot for Animal Stocks

Genetics

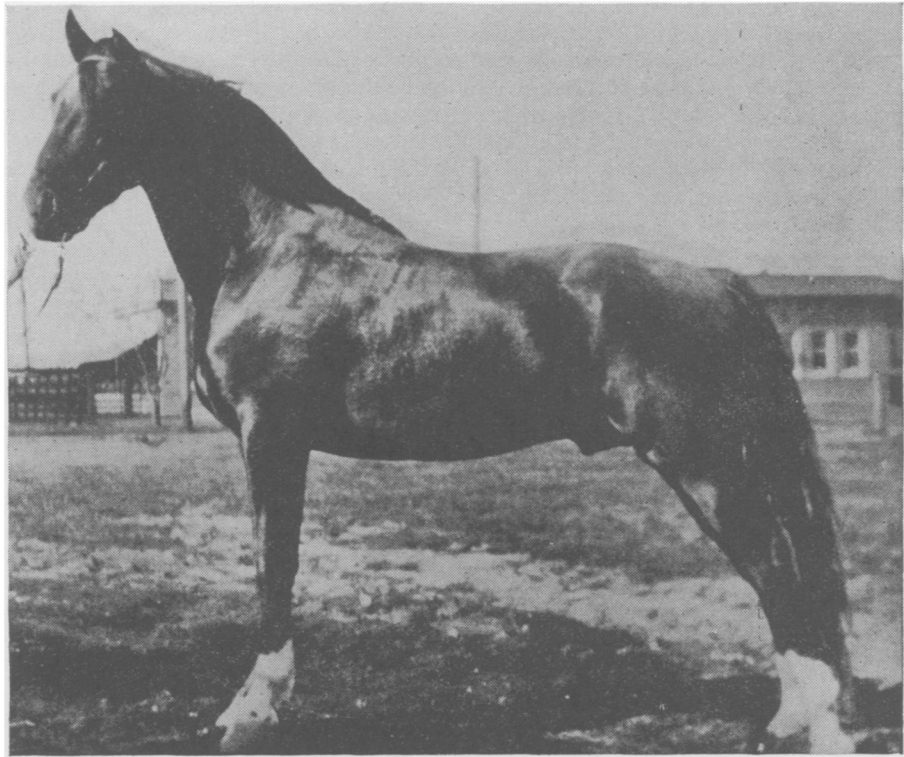
By FRANK THONE

In the old West, the hard-riding, hard-hitting, hard-drinking West, where you called a man "pardner" on sight and bought him a drink, it was not considered good form to have curiosity concerning where a man came from, or to inquire overmuch into his ancestry or antecedents. The great open spaces of those days were the mouth of an indiscriminating melting pot into which all kinds and conditions of human materials were dumped and out of which some of the most amazing human alloys—both good and ill—have been poured.

The human melting pot west of the Missouri is quieter now, though it still simmers; but from the Gulf to Bering Sea another melting pot has been set a-cooking. Into it go various domestic animal stocks, both immigrant and native, and out of it shall come—if the preliminary samples be any basis for judgment—new races of beasts such as have not been seen since Noah, ancestor and patron of all stockmen, stood at the loading-chute of the Ark. Crosses between cattle and the native bison, between cattle and long-haired yaks from the Himalayas, between Siberian reindeer and Alaskan caribou, between fat-tailed sheep from Persia and domestic sheep from England, are among the new citizens of the North American West.

There won't be any undesirable citizens among them. Such will be born, no doubt, but the breeder can weed them out as infants. They do not have a chance to survive, as did some of their human prototypes, who later succeeded in escaping even the sheriff's six-gun or the ready noose of a Vigilance Committee. That is one advantage the animal melting-pot has over the human one. The undesirable animal crosses are either eliminated at once or survive only as caged-up curiosities, to show breeders how not to do it next time.

The secret behind the efforts of breeders to produce cattle hybrids of kinds that were never seen even in the prophetic dreams of Pharaoh is to be found in a climatic and geographical paradox. The "cow country" of our West is really not cow country at all. At least it isn't in the modern economic sense, which considers book-keeping more closely than it does romance. The breeds of beef cattle that have become standard in this country originated in Western Europe on rich



THIS FINE-LOOKING HORSE is one-quarter mule; he is the grandson of Old Beck, the maternal mule of Texas

pastures where blizzards never howled, and where there was shelter from even the relatively mild storms that did come. Their names tell that: Angus, Durham, Hereford, and so on. They have furthermore been bred in this country to meet the needs of the moderately humid East and not to face the sterner life of the thin-grassed Western range, where they must shift for themselves as best they can even when a "norther" catches them in the open. The old Spanish cattle, famous in a thousand novels and movies as "Texas longhorns", came of a stock more easily adapted to drought and cold. But they were not shaped right for modern beef fashions, and had to give way before the Eastern breeds, which affected the box-car silhouette, and carried more meat aft.

Because these could not stand the climate so well and because they fell easier victims to the terrible tick-borne fever, stockmen early began casting about for possible hardy mixtures to add to their blood. The first possibility, naturally, was the native American buffalo or bison. Most of these ancient "cattle of the Indians" had been wiped out in the terrible slaughter of the '80's, but a few cattlemen,

either more sentimental or more far-sighted than their contemporaries, had kept small private herds going on their ranches. Here was a bovine stock inured to Western range life, able to travel and feed at the same time, heedless of blizzards, resistant to disease.

So they tried crossing bison and cattle. The results at first were not an unqualified success. Domestic cows bore calves in a fair proportion of cases, though frequently with considerable trouble, and at first the offspring were all heifers. It was thought that in such a cross bull calves could not be born alive. The trouble was, that though such hybridization had been tried sporadically for more than a hundred years, it had never been tried on anything like a large scale. Finally, however, Mossom M. Boyd, a Canadian breeder, succeeded in obtaining a bull that was almost one-half bison, by mating a pure-bred bison bull with cow that had one-quarter bison blood in her. A number of other male calves with a high percentage of bison blood have been obtained. With these the experiments are being continued in Canada, where the shaggy mane of the bison is of especial value in (*Turn to next page*)

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protecting the animal against the blinding snowstorms that sweep the range.

The great hump of flesh on the bison's shoulders tends to be reproduced in the domestic-cross offspring also, so that Mr. Boyd has said, "It does not seem unreasonable, therefore, to suggest that the fur of the bison and his great back may be carried by means of selection without any diminution through succeeding generations of diminishing bison blood until the coat and hump have been practically taken from the bison and placed upon the back of the domestic ox."

Charles Goodnight, a pioneer breeder of Texas, agrees with Mr. Boyd in his high estimate of the cattle-bison cross. "They are immune from all diseases as far as I have tested them," he has stated. "They are much greater in weight, eat much less and hold their flesh better under more adverse conditions. . . . They have a better meat, clear of fiber, and it never gets tough like beef. They have long and deep backs, enabling them to cut at least 130 pounds more meat than other cattle. More of them can be grazed on a given area. They do not run from heel flies nor drift in storms, but like the buffalo face the blizzards. They rise on their fore feet instead of their hind feet. This enables them to rise when in a weakened condition. They never lie down with their backs down hill, so they are able to rise quickly and easily. This habit is reversed in cattle."

The name of the final product of the cross-breeding of cattle and bison is itself a cross: "cattalo". Several spellings were put forward, but this one was accepted as standard by the American Genetic Association, of Washington, D. C.

A more recent cattle hybrid than the cattalo, but one which has been more favorably received in the Texas area, is the cross between the humped zebu, or sacred Brahmin cow of India, with domestic stock. It was discovered that the zebu does not fall victim to the tick-borne cattle diseases that take heavy toll of the native stock of European origin. Since the zebu is more nearly related to domestic cattle than is the bison, the two species amalgamate more readily and there is less loss in breeding. Moreover, after a couple of generations a "grade" animal shows little sign of the Indian admixture, but looks very much like its European ancestors. This, of course, interferes less with conventional market requirements.

For these reasons, males with Brahmin blood in them have come to be in considerable demand in the tick-infested parts of the Southwest. Since quarantine regulations do not permit the importation of any more breeding stock from the Orient, there are relatively few full-blooded zebu bulls in Texas, and the highest proportion of Brahmin blood usually encountered runs from three-fourths to seven-eighths.

From a much more remote quarter of the world than the Southwest, and closer to the zebu's own home, a weird outcross has been reported to the American Genetic Association, although that organization discreetly declines to vouch for its authenticity. This is the offspring of a Philippine carabao, or water buffalo, which unlike our bison, is a real buffalo. This animal looks as though it might have been sired by a zebu; at any rate, it is very queer looking for a carabao. But when all is said, the verdict will probably have to remain like that in many another doubtful case east of Suez: "the paternity remains in doubt."

To return to our own continent again. Up in Northern Canada, where the Dominion government maintains the greatest bison ranch in the world, they have been trying out another Asiatic animal as a possible contributor to the solution of the range-cattle problem. This is the yak, a long-haired, brush-tailed, slow-moving, patient, stubborn animal from the cold, storm-swept plateaus of Tibet. The yak has to be patient, for his age-long owners and drivers have been the Tibetans. He has to be stubborn, or he could never have survived association with them. But what is more to the point, he can endure the worst winters in the world—worse even than the weather they make at Medicine Hat.

As mates for the yak, the Canadians have brought in some Galway cattle—those rough-coated, hardy beasts that can thrive in the stormy west of Ireland country. The yaks and the Galways must have realized a mutual affinity bred of their respective upland homes, for they have taken kindly to each other, and the result of their union is known as the "Galyak", an animal looking rather like a long-haired cow, but still swinging astern the long, white-ended, sacerdotal brush of a tail that is the pride of the yak. (There is, by the way, a human precedent for this Irish-Tibetan cross: see Kipling's gorgeous story about Nam-

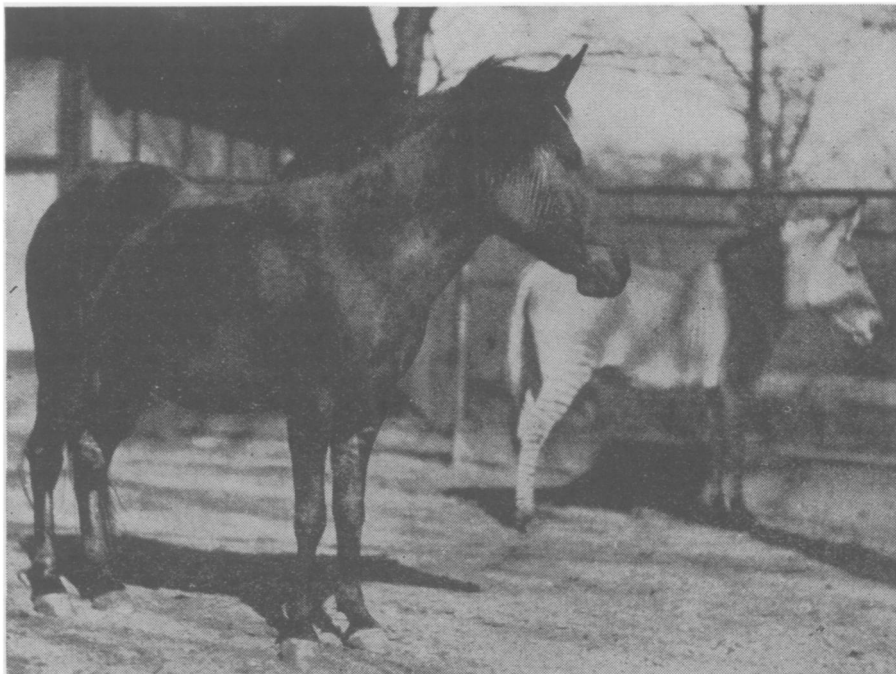
gay Doola.)

The Galyak is the serious effort of the Canadian breeders, but they have also tried a cross between the yak and the bison. Only one of these hybrids has ever been produced, and it is certainly a most strange creature. In body outline it is intermediate between bison and yak. It wears its coat thick all over, yak-fashion, instead of heavy in front and thin behind, like a bison. What it may be like in temperament must be a puzzle to its keepers, for the bison is an unstable, stampedeable animal, while the yak wouldn't go faster than three miles an hour if you built a fire under it. But whatever may be the use or interest of this yakson or bi-yak, whichever you may choose to call it, certainly its zoological cousin the Galyak gives promise of being an animal of real value on the Northern Canadian range.

Northward still, on the Alaskan tundras, where no imaginable hybrid of the domestic cattle could gain a living, a considerable livestock industry based on the reindeer has grown up, and large groups of Eskimo have abandoned their old nomadic hunting life to become well-to-do herdsman. The reindeer are descendants of animals imported from Siberia by the Department of Agriculture about a generation ago. There is in Alaska and Northern Canada a native cousin of the reindeer, the caribou. This animal is the staff of life of hunting tribes of Eskimo, but it has never been domesticated. It is a larger animal than the European reindeer and has more meat on it, so that experiments are being made in the crossing of the two stocks. The hybrids are undoubtedly better meat animals, and can probably scrape a living out of the snow more effectively than their European cousins. If they can be kept in herds (the wild caribou tends to scatter rather than to bunch), and if they prove tractable as draft animals the cross will be rated a big success. It may be that a few years hence Santa Claus will come round to the U. S. Department of Agriculture to trade in his present team for a sextet of the new-model caribou-reindeer.

The old dictum that hybrids are all sterile and can't reproduce has, of course, been handled pretty roughly in all these experiments. In some cases it holds, in others it doesn't. Anyhow, the doctrine seems to have been established originally by reference to the most familiar of domestic hybrids, the mule. (*Turn to page 197*)

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ZEBRA-HORSE AND ZEBRA-ASS HYBRIDS, in the National Zoological Park, Washington, D. C.

Mules as a rule do not breed, yet in the recent past two undoubted cases of mule mares giving birth to healthy foals have come to light.

"Old Beck" is only an ancient Texas "cotton mule" mare who has been on this planet long enough to vote, but she has done her bit toward breaking the age-old reproach of sterility leveled at her hybrid race. For she has not only borne offspring—two lusty colts—but now has a grand-child. For a mule to have a foal is an almost miraculous rarity, but for one of these to propagate is practically unheard of.

Yet this is the record of "old Beck," as reported by A. H. Groth of Texas A. and M. College. Her first offspring was a daughter, sired by a jack, and foaled in 1920. This feat brought her to the attention of the college authorities, and she was soon given a home on the campus. Subsequent matings with other jacks failed to produce another colt, but a noted stallion of the college stud sired a foal that has grown up to look quite like a horse—and a fine horse at that.

"Old Beck's" mule daughter has remained without issue, in spite of several attempts to breed her, but the horse-like colt, a stallion, has sired one healthy colt, now over a year old.

Mr. Groth says of him. "He has developed into a nicely balanced horse of saddle type. . . . He per-

forms well under saddle and is possessed of remarkable intelligence. The only mule characteristic which he shows is his dislike for crossing a ditch or stream."

Erasmus Haworth of Lawrence, Kans., records another case of a mule mare producing a foal sired by a jack. The same mule is now believed to be with foal a second time.

Every once in a while some one takes a notion to hybridize the zebra with the horse or the donkey. It isn't especially hard to do, for all three animals are fairly closely related—as closely, say, as cattle and zebu are, and more closely than cattle and bison. The offspring are called by various names, such as "zebrass" and "zebrule". As a rule they are of no practical use, for they usually inherit the wild intractability of their striped ancestors; but at any rate they are interesting animals and make nice specimens for zoos. At present the U. S. Zoological Park in Washington has two of these zebra hybrids, one a cross between zebra and horse and the other between zebra and ass.

The question of the hybrid origin of some of our breeds of dogs is frequently agitated. The dogs that look more or less like wolves, especially German police dogs, Alsatian shepherds and Eskimo "huskies", are often declared to be "part wolf", and their occasional outbreaks of temper

ascribed to this supposed lupine ancestry. Nothing is known with any certainty about all this, except that presumably the Stone Age ancestors of all tame dogs were originally all wild dogs captured as puppies and reared in captivity, tumbling around with the Stone Age kids on the floor of the Stone Age cave or tent. But there would be nothing incredible about crossing wolf into dog stock or vice versa, for zoologically dogs and wolves are much more nearly related than cattle, bison, zebu and yak. These various bovines are all distinct species, while all varieties of dogs are rated as belonging to the same species, which includes also the most widespread species of wolf, the big lobo or timber wolf. One interspecific hybrid at least has been made, crossing shepherd with the prairie wolf or coyote. The pups were "cute" enough when they were small, but at six months of age the ignoble coyote traits displayed themselves in such habits as persistent chicken stealing. The mating had not been what the *Almanach de Gotha* would rate as "of equals", and the curse rested on the offspring.

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Flies Aid Medical Studies

Genetics

Flies which have long been held in bad esteem as spreaders of disease are about to do their bit in helping the human race. They are being used now for studies of the effect of X-rays on future generations. In flies, the harmful effects of these rays appear in the third and fourth generation, Dr. Mary B. Stark of New York City reported recently. She has exposed flies to X-rays for varying lengths of time. While the individuals exposed continue to grow and breed, their descendants die off. Dr. Stark believes this is because the reproductive cells of the grandparent or great-grandparent flies were injured by the rays. This injury is inherited and finally causes death. In this same way cancer may be produced in the third and fourth generations of flies. Dr. Stark believes that the experiments on flies will throw some light on this problem in human beings. Her theory is not accepted by all scientists, however. Because the human race breeds slowly, it will be some time before the inherited effects of X-rays can be noticed in man.

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