

ZEBROIDS LIKELY TO REPLACE THE MULE

OUR GOVERNMENT EXPERIMENTING IN CROSS-BREEDING BETWEEN THE STRIPED ZEBRA AND THE HORSE



PRESIDENT GREY'S ZEBRA FROM KING MENELIK

BARON DE PARANA'S ZEBROID

HAGENBECK'S ZEBRAS. USED IN BREEDING ZEBROIDS SHOWN IN HARNESS

ZEBROIDS IN HARNESS

WASHINGTON, March 11.—(Special Correspondence of The Sunday Oregonian.)—Now that the Bureau of Plant Industry has commenced to meet with encouraging success in inventing new plant species by hybridization, or cross-breeding, its sister Bureau of Animal Industry is about to undertake the invention of new animal species by the same interesting process. By crossing the striped zebra with the horse, and perhaps with other draft animals, it hopes to create a hybrid which will put the common mule to shame. The mule, as we know, is itself a hybrid of the jackass and the mare, while the "bant" or "jennet" is a similar offspring of the horse as the male parent and the ass as the mother. Both of these hybrids have been esteemed in this country, especially since the King of Spain presented to George Washington two Andalusian jackasses and a tiny ancestor of our best mule stock of today.

It is somewhat of a coincidence that the animal selected to breed with the mule, to replace the jackass, is also a royal gift. It is the valuable Grevy zebra, "Dan," lately sent to President Roosevelt by Emperor Menelik of Abyssinia. The Grevy zebra received its name from the fact that Menelik sent one as a gift to President Grevy, of France, in 1882. A second zebra of the same species to be used in the experiment is that which was a few months ago presented to our Government by Ras Makonen, Menelik's nephew and principal general—the warrior, in fact, who whipped the Italians ten years or more ago. At the same time the Ras sent a zebra mare of the Grevy species, but she died before the Abyssinians got her to the Red Sea. To compensate for this loss the Ras threw in a lion and several other beasts. The two zebras have since been quartered at the National Zoo since their respective arrivals. "Dan" is five years old, measures 12 hands 2 inches and weighs 500 pounds, while the Ras' colt is 2 years old and weighs 600 pounds. Six ordinary good farm mares have been purchased for the experiments, which will be conducted at the Bureau's experiment station, College Park, Md.

King of Striped Horses.
Grevy zebras, so far as is known to our authorities, have never been used to produce hybrids with the horse. These specimens are the only zebras of that species ever brought to the Western Continent. The Grevy zebra is the king of the entire striped horse family, and the most powerful beast of its kind. It sometimes stands 15 hands in height, but in form resembles the ass more than the horse. Its ears are particularly large and mobile, and, unlike some other zebras, it is striped down to its hoofs. But the characteristic of marking which distinguishes it from all other species are the narrowness and contrast of its stripes, the contrast increasing with age. It is much more powerful and active than the ordinary donkey. Its home is among the plateaus of So-

maliland and Shoa, Western Central Africa, where, especially in certain seasons of the year, when it becomes very fat, its flesh is prized for food both by the native tribes and by lions. Naturalists regard the Grevy species as the most primitive of all zebras, and it is now believed that the striped horse exhibited in the amphitheater of Rome, in the third century, A. D., was of this family and not a mountain zebra, as previously supposed. The mountain zebra, once common in South Africa and generally referred to in old works as the "common zebra," has legs barred to the hoofs and stripes suggesting a griffin on either side of the tail—two characteristics of the Grevy, also. The mountain zebra, which stands at about 12 hands, was once very numerous in the mountains of Cape Colony, but has now almost entirely disappeared from South Africa, although there is a variety left in Angola, Portuguese West Africa. A third species, named after its discoverer—the Burchell zebra, is found in South Africa, down as far as the Orange River and along the north and east borders of the Transvaal. It is much more like the striped horse now erroneously referred to as "quagga," in spite of the fact that the quagga is now lost or entirely extinct. The Burchell zebra is characterized by its perfectly white legs and has scarcely a vestige of transverse stripes across either its crop or its loins. When wild herds of Grevy and Burchell zebras have been seen together the former have appeared like horses among a flock of

ponies, and it has been noted that whereas Grevy stallions fight viciously among themselves, they never molest the smaller Burchell stallions. A reason for this is suggested by M. Horace Hayes, late captain of "the Buffs," that Englishman whose book, "The Points of a Horse," is now recognized as a standard work. Captain Hayes says: "The society rules of these animals appear to be much more strict than those of the English people, for, although they have no objection to associating with foreigners, they marry only members of their own class." These white-legged Burchell zebras breed well in confinement, and are easy to break in compared with the far more rare Grevy and mountain species. They have been utilized for coach teams in the Transvaal. While being harnessed to the coach they stand quite still and wait for the signal to start, pulling up when required and appearing to be perfectly amenable to the bridle. They are softer mouthed than the mule, and never kick, but when first handled are apt to bite.

To Get Disease-Resistant Hybrid.
To obtain a disease-resistant hybrid is the prime hope of the Bureau of Animal Industry. Zebras are found in the Transvaal to be entirely free from that South

African scourge called "horse-sickness" and to be immune from the bite of the poisonous "tsetse" fly, a carrier of sure death to horses. It thus appears that the blood of the zebra family has a disease-resistant constituent—a natural anti-toxin—which would greatly improve that of our horses if admixed therewith. Professor J. C. Ewart, of the University of Edinburgh, who lately imported into Scotland several Burchell zebras, finds, moreover, that they possess marvelous powers of recovering from severe injuries. One of his zebras mares dragged from its place a heavy iron water-trough, and while rearing with fright, swung the receptacle about until it had severely lacerated and cut its forelegs. In a few days the pocket had closed and the wound had entirely recovered, the wounds having healed without swelling or the appearance of pus. Another of his zebras knocked against an upright fence rail and tore out the flesh between the two halves of its lower jaw, leaving a pocket large enough to hold a walnut. In a few days the pocket had closed and the wound mended without a scar or the least irregularity in the striping.

Although our scientists will be the first to attempt hybridization, with the prize Grevy zebra—sought by others, but never obtained because of its scarcity and difficulty of capture—others have made the experiment with the smaller, more common and more docile Burchell species. Professor Ewart, above referred to, has at Penycuik (pronounced Pennycuik), Scotland, bred some interesting hybrids by crossing mares of various sires and breeds with his Burchell zebra stallion "Matopo," also by crossing Burchell zebra mares with donkeys and ponies. Some of the hybrids—to which have been given the name "zebrate" or "zebroid"—in form and disposition strongly suggest their zebra sire, others their respective dams, but even the most zebra-like in form are utterly unlike the zebra parent in their markings. Rather than resembling a parent, or even a grandparent, they appear to inherit the characteristics of a remote ancestor—in all probability the professor's opinion, thousands of generations removed, and far more like the Grevy than the Burchell zebra. This is thought to be due to the fact that the Grevy zebra is the most primitive of surviving types. In some of the zebroids the stripes were abundant and pronounced, while others were but faintly striped and only upon the neck and hind quarters. That the hybrid inherits the hardness

of the zebra parent is indicated to Professor Ewart by the case of a zebroid colt two months old, which was found with a flap of skin five inches long and an inch and a half wide, hanging down over the front of its left foreleg. The skin being replaced and stitched, the wound soon healed, leaving only a slight scar. There was no lameness or swelling either below the wound at the fetlock or above, in the vicinity of the knee.

More Docile Than Mules.
Some of his hybrids he describes as having the very elegant action of young stags. In disposition the zebra parents are in all respects more intense than horses, more on the alert, more timid and suspicious, and yet more inquisitive. When he once decides to take action the zebra moves more rapidly than a horse, is more regardless of consequences, and in case of accident suffers more from shock to his nervous system than from physical wounds. The stallion Matopo is terrified at a coil of rope and any serpent-like object he strikes with his hoofs. When his legs are touched with a rope he drops upon his knees or lies down altogether. The first time a blanket was thrown over him he ran, kicked and reared until it was thrown off.

But the zebroid, compared with the zebra parent is, Professor Ewart says, "as water unto wine." Although he finds that it may take longer to break zebroids than horses the former will, he thinks, be more amenable to training than ordinary mules and infinitely more easily managed than zebra-ass hybrids. He predicts that hybrids between the large Grevy zebra and the horse—such as we are now to produce—would be as easily managed as ordinary mules. For use by the British in India and Africa he says they would be in every way more useful than mules. Whether the zebroid would be sterile, like the mule, has not yet been answered by these modern experiments. However, there is this testimony of Darwin on the subject, from which the reader may draw his own conclusions: "Many years ago I saw in the zoological gardens a curious triple hybrid from a bay mare by a hybrid from a bay mare by a hybrid from a male ass and a female zebra."

The Brazilian Minister has forwarded to the Bureau of animal industries some further data regarding the crossing of the Burchell zebra with the common mare. His experiments having been conducted by Baron de Parana, who has a large plantation in the State of Rio Janeiro, the Baron's hybrids are described as very sprightly but gentle, becoming very docile as their dams are. In crossing with mares of lighter breeds, such as Arabs, Normans, etc., produces zebroids that are tall and slender, and suitable for work, but not so heavy as those bred from those who care for them. They feed as well from the manger as in the pasture, and have extraordinary muscular strength. The Baron believes the zebroid will be the mule of the 20th century.

Hagenbeck, the animal trainer, has also crossed the zebra and horse, using a species of zebra from the German coast of East Africa and one which, although it is striped below the knees and hoofs, appears to belong to the Burchell group. A pair of the resulting zebroids, harnessed to a carriage, are shown in the accompanying photograph.

At last account Dr. Ewart, the Scotch investigator referred to, had commenced experiments in the crossing of zebra with zebras, or Indian cattle. If he succeeds in this perhaps the world will profit by a horned mule, both fore and aft.—(Copyright, 1904.) JOHN ELFRETH WATKINS.

Recollections of Judge George H. Williams

No. XLV.—The Impeachment of President Andrew Johnson, Continued.

WHEN Judge Curtis had concluded his address, the defense proceeded to put in its evidence. General Lorenzo Thomas was the first witness called, and his examination and cross-examination occupied nearly two days. General Sherman was the next witness, and over a question as to an interview between him and the President a long and heated discussion took place between counsel, after which the Senate, by a vote of 28 to 23 decided that the evidence was inadmissible. The whole purport of the testimony of General Sherman was to show conversation between him and the President about the object of the President in the removal of Secretary Stanton, and the Senate ruled out a large part of this proposed testimony. Secretary of the Navy Wells and Postmaster-General Randall were also examined, with several other witnesses, and in addition to this the whole history of the Government as to removal and appointments to office was put in evidence, and this, with the numerous questions raised and discussed occupied the time of the court from the 9th to the 26th of April.

"The world in after times will read the history of the administration of Andrew Johnson as an illustration of the depth of the darkness which had descended upon the Republic of whom at one time he claimed to be one, surrounded by men who had supported, aided and cheered Mr. Lincoln through the darkest hours and darkest trials of his sad yet immortal administration—men whose lives had been dedicated to the cause of justice, law and universal liberty—the men who had nominated and elected him to the second office in the Nation at a time when he scarcely dared visit his own home because of the traitorous instincts of his own people, yet as shown by his official acts, messages and speeches, conversations and associations almost from the time when the blood of Lincoln was warm on the floor of Ford's theater, Andrew Johnson was contemplating treason to all the fresh fruits of the overthrow and crushed rebellion, and an affiliation with and a practical official and hearty sympathy for those who had cost hundreds of slain citizens, billions of treasure and an almost ruined country. His great aim and purpose have been to subvert law, usurp authority, insult and outrage Congress, reconstruct the rebel states in the interests of treason, insult the memories and resting places of our heroic dead, outrage the feelings and deride the principles of the living men who aided in saving the Union, and deliver all snatched from wreck and ruin into the hands of unrepentant but by him pardoned traitors."

well reasoned, but in the course of his remarks he made use of this far-fetched and silly illustration: "Travelers and astronomers inform us that in the Southern heavens near the Southern Cross there is a vast space which the uneducated call 'a hole in the sky,' where the eye of man, with the aid of the powers of the telescope has been unable to discover nebulae or asteroids or comets, or planets or stars or sun. In that dreary, cold, dark region, which is only known to be less than infinite by the evidences of creation elsewhere the Great Author of celestial mechanism has left the chaos which was in the beginning. If this earth were capable of the sentiments and emotions of justice and virtue which in human mortal beings are the evidences and the pledge of our divine origin and immortal destiny, it would heave and throw with the energy of the elemental forces of nature and project this empty region of which Saviar of men that vast region there found to exist in solitude eternal as life or as the absence of life emblematical, or if not really that enemy of the two races of men who spoke in warning to those who are the enemies of themselves, of their race and of their God."

Other Speeches.
He was followed by Mr. Nelson for the defendant. Mr. Nelson was a warm personal friend of the President from Tennessee, and his feelings were deeply enlisted in his speech. He spoke for nearly two days, and his speech, though at times eloquent and strong, was generally too florid and too full of poetry to make much impression upon the judicial mind. Mr. Williams S. Groesbeck followed in an address for the President. Mr. Groesbeck was not as well known in the profession as Judge Curtis or Mr. Everts, but his speech impressed me as the most lawyer-like argument addressed to me since during the trial. It was shorter than the others, and was a clear, condensed and logical argument, free from irrelevant matter and closely confined to the questions before the Senate.

Mr. Thaddeus Stevens then commenced to read an argument for the prosecution, but was so feeble that he could not proceed, and General Butler concluded the reading. The argument of Mr. Stevens was short, crisp and pointed like his speeches.

Mr. Thomas Williams, one of the managers, next addressed the Senate for the prosecution, in which he discussed the Constitutional and legal aspects of the case in a fairly good argument.

Invitation to a Duel.
Here an episode appeared in the trial. Judge Black, at the commencement of the trial, withdrew from the defense of the President upon the alleged ground that the President had taken some action with reference to Alta Vela, a guano island, displeasing to him. Mr. Nelson had referred to this matter in his speech vindicating the President, and reflecting upon Judge Black and some of the members of Congress. General Butler now asked permission to make a statement of what he called facts, which was allowed, and his statement led to a sharp personal colloquy between him and Mr. Nelson, which the Senate was compelled to stop. Mr. Nelson in the course of his remarks at this time, referring to General Butler, said: "So far as any question that the gentleman desires to make of a personal character with me is concerned, this is not the place to do it." Mr. Sumner introduced a resolution that this language indicated an invitation of a duel, and expressing the disapprobation of the Senate. After some talk and an apology from Mr. Nelson, the matter was dropped.

He can contrive no method but that of a convulsion of the earth that shall project the deposed President to this infinitely distant space, but a shock of a nature so vast an energy and for so great a result on him might unsettle even the footing of the firm members of Congress.

"We certainly need not resort to so perpetual a method as that. How shall we accomplish it? Why, in the first place, nobody knows where that space is but the learned manager himself, and he is the necessary deputy to execute the judgment of the court. Let it, then, be provided that in case of your sentence of deposition and removal from office, the honorable and astronomical manager shall take into his own hands the executing of the sentence. With the President made fast to his broad and strong shoulders, and having already essayed the flight of imagination, better prepared than anybody else to execute it in form, taking the advantage of leaders as far as leaders will go to the top of this great Capitol, and springing, then, with his foot the crest of liberty, let him set upon his flight while the two Houses of Congress and all the people of the United States shall shout: 'Sit itur ad astra!'

"But here a distressing doubt strikes me: How will the manager get back? He will have got far beyond the reach of gravitation to restore him, and so ambitious a wing as his could never stoop to downward flight. Indeed, as he passes through the constellations that famous question of Carlyle by which he decides the littleness of human affairs upon the scale of the measure of the heavens. 'What thinks Boetes as he drives his dogs up the zenith in their race of Siberian fire' will force itself upon his notice. What, indeed, would Boetes think of this new constellation? Besides reaching this space beyond the power of Congress even to send for persons and papers, how shall he return and how decide in the contest then become personal and perpetual, the struggle of strength between him and the President? In this new revolution thus established forever who shall decide which is the sun and which is the moon, who determine the only scientific test which reflects the hardest upon the other?"

Last Speech for the Prosecution.
This delivery of Mr. Walt's convulsed the Senate with laughter. The Boutwells never forgive him for this speech. He occupied two days, and his argument sparkled with wit and sarcasm. Attorney-General Stanton then appeared much enfeebled by his late illness and made a feeble and earnest appeal for the President. Manager Bingham then concluded the argument in a speech that took the most of three days to deliver, and was an able resume of all that had theretofore been said against the President. He said in conclusion: "I ask you to consider that we stand this day pleading for the violation of the law by the graves of a half million of martyred hero patriots who made death beautiful by the sacrifice of themselves for their country, the Constitution, and the law, and who by their sublime example, have taught us that all must obey the law, that none are above the law, that no man lives for himself alone, but each for all, that some must die, that the state may live, that the citizen is at best but for a day, while the commonwealth is for all time, and that position, however high, patronage, however powerful, cannot be permitted to shelter crime to the peril of the Republic."

This subject will be continued and concluded in the next page.

GEORGE H. WILLIAMS.

According to the Book.
Chicago News.
"Miles—By the way, old man, do you believe in dreams?"
"Giles—You bet I do! One night about a month ago I dreamed that an angel appeared at my bedside and said, 'Prepare for the worst,' then disappeared."
"Miles—Well?"
"Giles—The very next day our cook left, and my wife has been doing the cooking ever since."