

masks are worn at all ceremonial functions and serve to carry out the belief that the wearer is not a man but a spirit from the jungle.

The masks are of various types, all of them beautifully carved by special tribal artists. Many of them are portraits, occasionally of an important ancestor; others are caricatures. They vary in size, some being small replicas "for the spirit to rest on when he's tired." Some are tiny portraits of the owner, serving both as a sort of fraternity badge and as an object of personal worship. All are plain black except those worn by high officials which may have white stripes or red lips, red being the sacred Poro color.

The women of the tribes, excluded from the Poro, have a parallel society, the Sande, which functions in a somewhat similar manner and gives the girls instruction in the household arts and medical remedies, as well as a thorough training in poisons and their uses. Thus, while religion is for men only, the women actually have a much higher standing than in other primitive societies by this threat of poisoning.

Another mark of woman's relatively high position is a very carefully guarded Poro secret. The consort of the big man of the Poro is head of the Sande and attends Poro meetings. Only these two are members of both, a fact known only to high officials.

Dr. Harley has also obtained valuable records of black magic societies, leopard and snake societies, and some of their sacred relics and other examples of primitive African arts.

Science News Letter, January 1, 1938

ENGINEERING

Industry's Giants Are Industry's Children

See Front Cover

DESTINED perhaps to be the driving power behind great industrial plants, these beginnings of giant electrical machines are themselves industry's offspring—giants on the way to birth. Here they are growing in the assembly aisle in the Westinghouse factory. Presently they will be the servants of men; now men are serving them.

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Beavers were once plentiful around Sante Fe, N. M., and they are now being re-introduced there in a state park.

Only one-seventh of Japan is fit for farming.

BIOLOGY—MEDICINE

Individuals Changing Sex Neither Man Nor Woman

Intersexes Not Rare, and Biologically Important; Prolactin Has Outstanding Role in Growth of Intestine

WHEN a woman turns into a man, and thereby becomes front-page news, it is pretty safe to assume that she never was entirely a woman.

More probably she was an "intersex"—a being neither female nor male, but in process of transition from the one to the other from the earliest pre-birth stage of development onward.

The denouement, when "she" is declared legally a "he", is only the last step in a long process.

Intersexes are by no means rare throughout the whole animal kingdom, declared Dr. Richard Goldschmidt of the University of California to the American Association for the Advancement of Science. They are found in all gradations between completely male and completely female. Dr. Goldschmidt confined his discussion mostly to examples taken from among the insects.

An intersex individual begins development normally enough, as either all male or all female. But there comes a physiological turning point, where biochemical or genetic forces tending toward opposite sexuality begin to operate. The later-developing sex organs may then become those of the individual's natural opposite.

Two types of influence may give rise to intersex development. Hereditary influences, resident in or on the chromosomes within the cells, may start and carry through the process; or female may be turned into male (or vice versa) by the natural or artificial injection of opposite-sex hormone or gland secretion.

Milk-Hormone

Prolactin, the gland secretion or hormone that causes the flow of milk in mother animals, also causes growth of an important part of the digestive tract, it was demonstrated in experiments reported by Drs. J. P. Schooley, Oscar Riddle and R. W. Bates of the department of genetics of the Carnegie Institution of Washington, with laboratories at Cold Spring Harbor, N. Y.

Prolactin is one of the products of the pituitary, a ductless gland situated in the head, near the brain. The three in-

vestigators surgically removed the pituitaries from 149 pigeons. They then administered pituitary extracts to part of them, leaving the rest untreated.

The birds given the pituitary extracts lived and grew in a way much more nearly normal than did the untreated pigeons. The latter showed marked loss in length of the small intestine, as well as in its food-absorbing inner surface. As might have been expected, the pituitary-less pigeons showed serious loss in weight.

Better appetite was evident in the operated pigeons receiving supplementary pituitary extract. They ate two or three times as much as did the pigeons not receiving the extract.

The critical test came when one group of operated birds was given prolactin, and a comparison group received pituitary extract from which all prolactin had been removed but which still presumably contained all its other elements. The prolactin group thrived well; the extract-minus-prolactin group did no better than would have been the case had they received no treatment at all.

Syphilis Damage

Over one-fourth of all children born with syphilis have involvement of the nervous system—brain, spinal cord or nerves or all three, Dr. Charles C. Dennie of the University of Kansas Medical School reported. He studied some 1,200 cases of congenital syphilis, that is, cases in which the disease was implanted in the brain and spinal cord at birth or sometime during childhood or adolescence.

Many of these children are in institutions for the feeble-minded. Dr. Dennie described them as "simply motivated lumps of flesh without conscious volition of their own." Their degree of mental deficiency shades upward from idiocy to dull wittedness. For the ones who have paresis or softening of the brain, there is no hope. Even with the most modern forms of treatment, only a few of them improve. Most of them gradually degenerate into a state of imbecility, followed by death.

In some cases of nerve syphilis the power of locomotion is affected. The condition is often wrongly diagnosed as birth injury or as infantile paralysis. A certain type of paralysis seen in these cases can be corrected by medical treatment without any operation.

Any child with paralysis of arm, leg or side should have a thorough examination by a physician, Dr. Dennie emphasized, because a large number of them do have syphilis.

The germ of syphilis may exist in a form that is intrinsically able to withstand the chemicals used to treat the disease and which are successful in curing it in the majority of cases, Dr. Herman Beerman of the University of Pennsylvania School of Medicine suggested. Existence of such strains of the germ, he pointed out, would explain the occasional failure of modern drugs in treatment of the disease.

Science News Letter, January 1, 1938

ZOOLOGY

Arctic Canada Looks for An Improved 'Husky' Dog

CANADIANS in the frozen region beyond the northernmost railroad are watching eagerly as dog breeders, amateur and professional, work hard to develop a strain of sled dog to replace the famous pure-bred Eskimo husky dog.

For the husky, hero in countless stories of fact and fiction and still the main means of transport in a frigid region only occasionally reached by boat and plane, is now disappearing as a result of indiscriminate cross-breeding by the white man.

In some parts of the Arctic, J. Dewey Soper, Canadian scientist and investigator, reveals in a report on Eskimo dogs issued by Canada's Department of Mines and Resources, "pure-blooded Eskimo dogs are now very rare. This is due to the fact that the white man, especially in recent years, has given considerable attention to increasing the size and strength of native dogs for draught purposes by cross-breeding with other types.

Breeding Often Indiscriminate

"This breeding has often been carried on in a rather indiscriminate way and although in some instances a faster or heavier type of dog has been developed, it is highly problematical if, for general purposes under Arctic conditions, any improvement has been achieved."

The dogs which today ply the trap trails in the wooded regions and the dogs which pull sleds over Arctic wastes for missionaries and police are a mixed lot, in every color from the grayish-white of the pure-bred husky, through blacks and browns, yellows and spotted varieties, telling the story of mixture with Russian wolf-hounds, wolves, big Newfoundlanders, mongrels, collies and even German police dogs.

Their varied appearance, as well as the increasing rarity of the pure-bred husky, which is quite rare in some parts of Arctic Canada, reveal the fact that each breeder has had something else in view to add speed, strength or size to his sled dogs.

Pure-Breds in North

The purest bred dogs receive the best care and are found at the farthest north police, mission and fur posts, hundreds of miles above the Arctic Circle, where planes do not yet reach and where boats come only once a year. For here they are almost the only means of transportation.

Growing rapidly from birth and

weighing 50 pounds when a year old, the husky weighs 100 pounds and can pull its own weight in sled and supplies when it is fully grown. In the winter it is fed two or three pounds of walrus or seal meat at nightfall. Dogs belonging to Eskimos are fed principally walrus meat, for the Eskimo himself is fond of seal. In the summer the team is left to itself to forage seafood cast up on the shore.

Must Guard Caches

When food is low the husky, which can travel as much as a thousand miles on a journey and can go for long periods of time without food, will eat almost anything. Then harness, sled ropes, clothing, kayaks have to be kept away from the dogs, for they will devour anything made of seal or walrus skin.

Food caches have to be guarded by especially large boulders, too big for the 100-pound dogs to move. But no matter how hungry, it is a fact that the husky will not touch wolf flesh, though they will eat each other.

Experiments in breeding are going on continually. The Royal Canadian Mounted Police have carried out experimental breeding at their headquarters in Ottawa with Borzoi dogs and at northern posts with other breeds. The Hudson Bay Company, giant fur trading organization, and other fur establishments, have carried out breeding tests with all types of large dogs.

Huskies breed all year; a litter can be expected at any sea- (*Turn to page 11*)



MIXED

A team of six mixed Eskimo husky dogs hauls a sled across the Great Bear Lake in western Canada. On dogs like these trappers, the "Mounties" and others depend for winter transportation.