## Male Toads Become Mothers

Zoology

TOADS have won the distinction of being the first males to give birth to an offspring. Several male toads were changed to perfectly good wives and mothers by Dr. Kitty Ponse, professor of experimental zoology at the University of Geneva, and when she reported her results to the Second International Congress for Sex Research in London, they created a considerable stir in biological circles.

The surgical removal of the sex glands of full-grown male toads was followed by the gradual enlargement of a tiny, hardly noticeable piece of tissue, called the organ of Bidder. This newly formed large organ upon closer examination turned out to be a female sex gland, an ovary, containing normal looking, mature eggs ready to be fertilized.

These ex-males mated willingly with real masculine toads and surprised scientists by their extreme partiality to their former sex in producing a progeny exclusively of males. Out of the 400 male-begotten and feminized male-conceived baby toads every single one turned out to be a male, presumably because of a peculiar organization of the eggs produced by the sexually changed animals.

In this connection it may be re-

called that an American scientist, Dr. A. V. Domm of the University of Chicago, accomplished another, equally remarkable feat, by changing the sex of birds into the exactly opposite direction. He removed in 175 young female chickens the left ovary, this being the fowls' only ovary; for the right one is always degenerated and atrophic. This small, degenerated nodule, however, very much like the organ of Bidder in toads, developed into a full-sized sex gland, but not to an ovary, as one might have supposed, but to the gland of the opposite sex, to a testicle. This newly formed male sex gland produced sperm, thus making the hens potential fathers.

Sex reversals caused by a loss of the sex gland occur also in nature. When male salamanders starve for many months their male sex gland occasionally degenerates completely, and upon finding food again they develop new sex glands in the place of the old, but the new glands are those of the opposite sex. And it happens that hens, too, lose their ovary, not by operation, but by disease. If tuberculosis should destroy their ovary, the effect is the same as after spaying; the small right nodule begins to grow and develops into a male sex gland.

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## Indians Make Birch Bark Maps

ABRADOR, which still ranks more or less as unknown country on the white man's map of the world, has been very thoroughly "discovered" and even partly mapped by the Indians who live on the peninsula. This enterprise of adventurous Indian explorers has been found out by Dr. Frank Speck, anthropologist of the University of Pennsylvania, who has just completed his survey of the Indian bands that live on the Labrador peninsula.

"It develops that there is no part of the region untracked or unknown to the nomadic bands, and that they even make maps upon birch-bark of its lakes and river systems," Dr. Speck stated.

The region, which takes in about one-twelfth of North America's territory, is one of the most sparsely inhabited parts of the world. Besides

the Eskimos along the coast, and several thousand white inhabitants, there are about 3,000 Indian natives in the entire area, Dr. Speck found. The anthropologist obtained first hand information from many of the scattered Indian bands, questioning them about their social organization, the extent of their boundaries, and their Indian names and the meanings.

Dr. Speck's survey, which has been going on for some years, shows that the Indians cannot properly be considered as belonging to two tribal groups, as they have heretofore been classified. The Indians live rather in bands composed of related families that hunt in the same section year after year and go to the same trading posts each summer to barter their fur catch. There are twenty-six bands in the area, he found.

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