

this knowledge, Dr. Streeter made his discovery that the maternal tissues begin preparations for the fertilized egg before it attaches itself to them.

These preparations consist in forming a marshy place on the interior surface of the uterus or womb. Into this marsh-like tissue, which is kept bathed in blood, the developing embryo shoots little stems called villi which are filled with blood vessels. The blood in these vessels never mixes with the maternal blood, but nourishment and waste materials are exchanged between them by means of gases and soluble material, Dr. Streeter explained.

Study of this process of attachment of the fertilized egg to the maternal tissues and the maternal preparations for it, may shed light on the causes of sterility, of abnormal developments resulting in monsters, and of abortions, Dr. Streeter pointed out. He said that his discovery rested not only on Dr. Hartman's work with monkey eggs, but on the skill in handling the tiny eggs and embryos developed by Dr. Chester H. Heuser of the Carnegie Institution.

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## PHYSIOLOGY

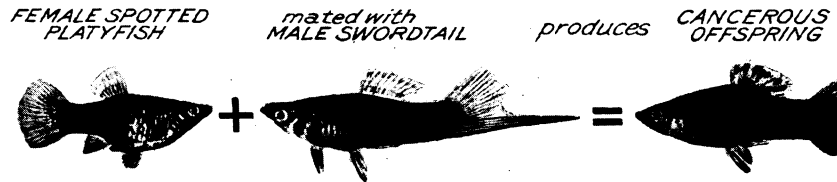
## Goldfish Experiments May Explain Cause of Obesity

**G**OLDFISH used in experiments at the California State Prison may shed new light on the cause and treatment of obesity. The effect of diet on the weight of these ornamental animals was investigated by Dr. Leo L. Stanley and Gordon L. Tescher of the prison's medical department and reported to *Endocrinology*.

These investigators studied four goldfish. Two of the fish were fed beef muscle and the other two were fed an equal amount by weight of ground-up glandular substance from the reproductive glands of a ram. The ones getting the beef muscle gained more weight than those getting glandular substance.

From previous experiments the investigators knew that the glandular substance increased the activity of the fish. They assumed that the two diets, beef muscle and glandular substance, were equally adequate as food. Consequently they concluded that the glandular substance increased the energy interchange in the fish bodies as well as the activity and thus kept down the weight of the fish. They pointed out in their report that this may have a bearing on the cause and treatment of obesity.

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## BIOLOGY

## Cancerous Fish Object of Scientific Quest in Mexico

**O**NE of the oddest scientific quests ever undertaken is that of Dr. Myron Gordon of Cornell University into Mexico, looking for cancerous fish.

Dr. Gordon, with two youths as assistants, is now en route to the state of Oaxaca, in the far south of Mexico, in an endeavor to establish that a fish cancer called melanosis actually occurs in nature.

He has produced the tumor unfailingly in the laboratory, by cross-breeding certain species of Mexican killifish, but science has yet to learn if the fish mate in their natural environment in such a way as to produce the disease.

Dr. Gordon's experiments over a period of more than three years give definite indication that melanotic tumor, a disease similar to cancer in human beings, is the result of heredity.

This does not mean that a diseased fish will transmit the cancer to its offspring. Rather the conclusion is that if two healthy fish of certain species are mated, the offspring will die of cancer. The application which this discovery might have to human cancer is far-reaching.

### Most Likely Spot

Dr. Gordon has chosen Oaxaca as his destination because it is the one spot in the world most likely to produce cancerous killifish. The fish he crosses to produce the disease in the laboratory are swordtails and spotted platyfish, tiny ornamental creatures that are competing with goldfish for public favor. In nature, so far as he knows, the only location where these two varieties inhabit the same waters is in Oaxaca, and he wishes to learn if they mate there naturally.

Black pigment cells, showing up as black splotches in the fish's skin, are requisite to the disease. It develops ex-

actly as human cancer does, growing as a tumor until parts begin to slough off and the fish eventually dies.

Dr. Gordon emphasizes that he has found no cure for cancer, nor is he seeking one; he is a zoologist, not a physician. What he is after are the fundamental biological facts which underlie the development of cancer.

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## MEDICINE

## Tourniquet Held Cause Of Shock and Gangrene

**T**HE TOURNIQUET, bound tightly around the arm or leg to stop bleeding, is no longer considered good practice in first aid, it appears from an editorial note in *The Lancet*. The danger of too prolonged pressure with this instrument was emphasized and the tourniquet itself was referred to as "a disreputable relic of the past whose only habitat should be the museum."

For seven years a Belgian physician, Dr. M. Stassen, has dispensed with the tourniquet in the first-aid equipments for which he has been responsible, *The Lancet* pointed out. During that time several hundred cases of compound fractures of the limbs, in which the skin as well as the bones are broken, have been brought to his hospital from points nearly 40 miles away. Not a single death from hemorrhage during transport occurred.

Dr. Stassen thinks the tourniquet is a frequent cause of shock and gas gangrene. By completely stopping the blood circulation in the injured limb, it promotes infection in the crushed and torn tissues. Its removal is followed by absorption of poisons capable of killing a patient already weakened by cold, shock, and loss of blood.

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