PSYCHOLOGY

Cause of War Threat

Narrow ways of human behavior developed in childhood find expression through the aggressions and discriminations of our present day world.

➤ ONE of the reasons the world is threatened by global war is that both in Russia and United States people are following narrow ways of human behavior developed in their childhood.

This is the conclusion reached on the basis of animal experimentation by Dr. Edward C. Tolman, of the University of California, psychologist brother of the late Dr. Richard C. Tolman, noted for his part in developing the atom bomb.

Dr. Tolman's report to the PSYCHOLOGICAL REVIEW (July) was awarded an honorable mention by a committee of the American Psychological Association who selected the best psychological papers of the year.

Watching a rat learn to find its way without error from the starting point of a maze to the reward of food in the goal box, Dr. Tolman has concluded that the animal achieves this by assembling the cues coming to him through his senses and by working these over in the control room of his brain, making them into a tentative road map of his environment.

If this map is of the narrow strip-map type, it will enable the rat to find his way repeatedly to the goal, provided no changes are introduced in the maze.

But the rats, Dr. Tolman found, are able to produce a more comprehensive map with which they can adapt to changed conditions. In one series of experiments, the rats learned to find their way through an indirect pathway to the food box. Later the maze was changed so that the starting place was unchanged, but the latter part of the maze was replaced by a sunburst series of runways. It was found that the majority of the rats selected the pathway that led them nearest to the part of the room where the food was located, although by an entirely different route from that traveled previously.

The reason why the rats sometimes produce only the narrow strip-maps was explored by Dr. Tolman. They are induced by a damaged brain, by an inadequate array of environmental cues, by an overdose of repetitions on the original trained-in path and by too strong motivations or too intense frustrations.

With men as with rats, Dr. Tolman pointed out, if early learning is too strongly stamped in by excessive motivation or frustration, it is difficult to re-learn when the original path is no longer correct. And if the individual receives a shock, there is a tendency to regress to the earlier, now inappropriate pathway.

The displacement of hates and aggressions onto outsiders is also a narrowing of the road-map of life, Dr. Tolman feels, due to too great motivation or frustration.

"Over and over again," he says, "men are blinded by too violent motivations and too intense frustrations into blind and unintelligent and in the end desperately dangerous hatred of outsiders. And the expression of these displaced hates ranges all the way from discrimination against minorities to world conflagrations."

"We dare not let ourselves or others," Dr. Tolman warns, "become so overemotional, so hungry, so ill-clad, so overmotivated that only narrow strip-maps will be developed. All of us, in Europe as well as in America, in the Orient as well as in the Occident, must be made calm enough and well-fed enough to be able to develop truly comprehensive maps.

"We must, in short, subject our children and ourselves (as the kindly experimenter would his rats) to the optimal conditions of moderate motivation and of an absence of unnecessary frustrations, whenever we put them and ourselves before that great God-given maze which is our human world. I cannot predict whether or not we will be able, or be allowed, to do this; but I can say that, only insofar as we are able and are allowed, have we cause for hope."

Science News Letter, October 22, 1949

PLANT PATHOLOGY

Electron Microscope Aids Battle Against Cancer

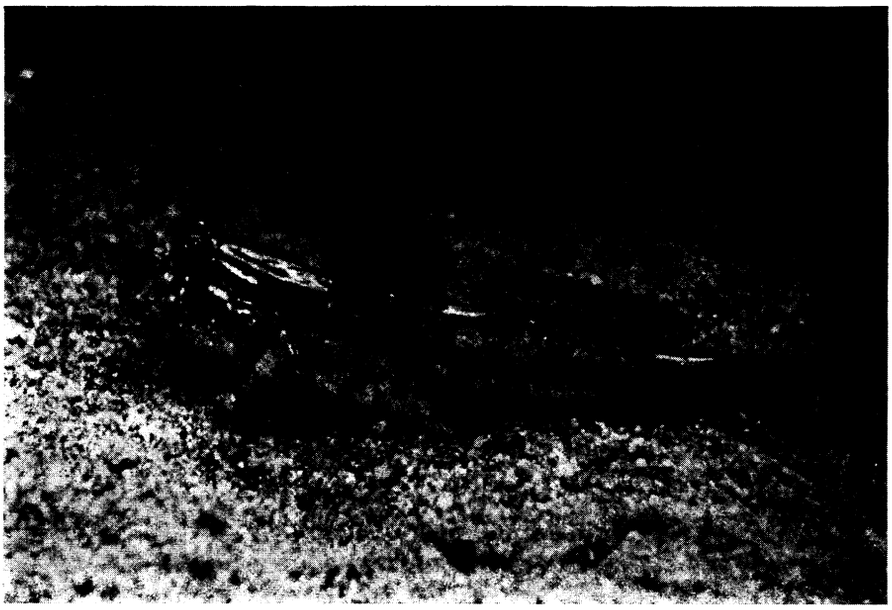
➤ AN electron microscope attack on the cancer problem at the basic level of growth in its simplest form has been made by Prof. Robley Williams and Drs. Robert C. Backus and Russell L. Steere of the University of Michigan.

The growth curves for two plant viruses have been plotted for the first time in researches by these men. They have done this through counts of the number of virus particles seen in electron microscope pictures of the partially purified particles.

The significance of the growth curves was explained as follows:

"Now for the first time precise measurements can be made of the effects of chemical and physical agents on the growth of plant virus. We'll be able to show what things speed growth and what slows it down, and it's the latter we're most interested in."

Science News Letter, October 22, 1949



TROPICAL MUDSPRINGER—This strange-looking creature is a "fish out of water", and it feels perfectly at home. The mudspringer is a tropical fish of Africa, Australia and southeastern Asia, and it is so called because of the prodigious leaps it makes along the ground. It uses its strong front fins something like oars, pulling itself forward with a rowing motion. When fly-catching, or when eluding capture, it can leap and hop with great agility.