



The Survival of the Old

**I**N THE unending struggle for existence that goes on in the natural world, most of the victims that perish are babies.

The naive picture of the survival-struggle that most of us have is typified by a couple of tigers fighting furiously for meat. The victor feeds and lives, the vanquished slinks off to die of his wounds or starve.

But dramatic competitions of this kind are comparatively rare in nature. Much more typical is the suppressing of huge numbers of competing individuals by sheer overcrowding. Thus if a clearing is made in a forest, by fire, wind, ax or other agency, thousands of seedlings spring into being, standing "thick as hair on a dog's back." After a time the more vigorous saplings outgrow the others, and the great majority, deprived of sunlight, die. In the end, the tallest survive.

Then ensues a stage of development in which the established mature trees monopolize the place. They do not permit enough sunlight to filter down through their interlaced tops to feed any seedlings on the forest floor. At most, there will be a scattering of pindling, anemic little trees, struggling along as best they can on chance patches of thin sunlight where the monopolizing canopy set up by their elders has a few leaks in it. Little Lazarus-trees they are, feeding on crumbs from the high table.

Yet all the time the old trees are producing millions of seeds apiece every year, lavishly throwing them away through the conflict between their natural urge to look out for themselves first and the equally natural urge to reproduce.

The same sort of thing occurs, in one form or other, in all nature. All egg-laying animals, from the lowliest worms to the loveliest birds, produce many times as many eggs as are needed to maintain

their normal numbers in the world. Fungi, ferns and other lower plants pepper the air with literally quintillions of spores. There is an unending, myriad slaughter of the innocents, all because the world is already filled to near-repletion with their elders. Only when death makes a gap in the senior ranks is there a chance for a few of them to grow up as replacements.

Even in our own species, for all our

lofty pride as the "highest primates" the old press down the young. Crowding populations make wars in which men kill men—yet children die faster from pestilence and want. In the Occident, we have added the further factor of an artificially limited birthrate. In a thousand ways it is made plain, all the way from ameba to man, that until the old are fed no more young mouths are wanted.

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MEDICINE

## Advises Exercise in Water For Arthritis Sufferers

**E**XERCISE and massage in the water, similar to the treatments given patients recovering from infantile paralysis, were recommended for sufferers from chronic arthritis at the meeting of the American Congress of Physical Therapy. Methods and results of such treatment of arthritis, the "rheumatism" of grandfather's day, were described by Dr. Euclid M. Smith of Hot Springs National Park, Arkansas.

"The relatively free movement without pain and the performance of exercises in water, such as walking, impossible to perform out of water, gives the patient a pleasurable sense of activity which can only be appreciated by one who has been confined to the bed or wheel chair," Dr. Smith said.

The buoyancy of the water enables the patient to move about much more freely with a minimum of pain and effort, Dr. Smith explained. He and his associates use for these treatments the natural Hot Springs water at a temperature of 98 to 99 degrees Fahrenheit. The warmth of the water dilates the small blood vessels at the surface of the body, "which increases the flow of blood and lymph to the parts, stimulates the nutrition of muscle tissue and promotes the elimination of toxic waste material."

Dr. Smith believes that heat applied by immersion in warm water while exercise and massage are being taken is more effective than heat by baking followed by exercise or massage.

Exercise under water for treating arthritis was adopted as a result of studies by the late Dr. Robert W. Lovette of Boston and Dr. Charles L. Lowman of Los Angeles, Dr. Smith pointed out.

Underwater treatment, he said, must be considered as only a part of the general physiotherapy program which is an important adjunct to the proper medical

care of the chronic arthritis patient.

"Heat, exercise and massage are the standard methods of treatment for muscular atrophy as well as joint affections," he continued. "The underwater treatment is based upon these fundamental principles of physiotherapy. Its application to the treatment of chronic arthritis is directed toward the prevention and correction of deformities, the restoration and reeducation of the atrophied muscle groups, the restoration of joint function and general body tone, and the correction of faulty body mechanics."

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