



SNAIL WEATHER MAP

Snails, despite their reputation for slowness, move a mile a minute or faster when a hurricane snatches the leaves they are on and whirls them through the air. This map drawn to show the distribution of Cuban land snails shows that they follow the hurricane pathways.

MALACOLOGY

Cuba Land Snails Travel On Wings of Hurricane "Air Line"

Young Snails Cemented to Leaves Tossed on These Aircraft for Hundreds of Miles to Florida Shores

HURRICANES, roaring up out of the Caribbean to lash the coasts of Cuba and then turn and spend their force on the Florida Keys, are responsible for certain striking peculiarities in the distribution of animal life of the two regions.

Such is the thesis advanced by Dr. Carlos de la Torre, noted Cuban naturalist and former president of the University of Havana, who was recently in Washington carrying on research in the great landshell collections of the U. S. National Museum.

Dr. de la Torre's special study for more than sixty years has been on Cuban land shells, among them the exquisitely colored genus *Liguus*. These are the houses of tree-dwelling snails found in infinite variety in Cuba, Haiti, and southern Florida.

On the island of Cuba he has found

certain varieties of these shells inhabiting definite, limited areas—and far away, on the Florida Keys and the tree-covered "islands" of the Everglades, he has found the same unmistakable varieties repeated.

This poses a rather tough biological riddle. Those hundreds of miles would be a terrific journey for snails, even with many centuries allowed for the trek. There is also the wide salt-water barrier of the Florida Strait, which the land-snails could never swim. And finally, why the total lack of representatives of any given variety, between the Cuban habitat and the home in Florida?

Only with the aid of mighty winds could these snails have made the long leap from island to peninsula, thinks Dr. de la Torre. Young snails secrete a cement with which they fasten themselves firmly to leaves. Such snail-bearing

leaves, wrenched from the trees in a hurricane, can be carried scores of miles, serving as aircraft for their involuntary little migrants. Those that fall into the sea are lost, but those that fall into congenial environment on shore can proceed to establish colonies of their species, far from the old home.

To clinch his argument, the Cuban scientist has taken a map of the region around Cuba and lower Florida, and set down shells from each of the twin Cuba-Florida colonies in their appropriate locations. On the same map were traced the paths of historic hurricanes. It was found that in practically every case the separated shell colonies in Cuba and Florida were on one or another of these hurricane highways. If not absolute proof, it is at least exceedingly striking evidence for the validity of Dr. de la Torre's hypothesis.

Dr. de la Torre has had one of the longest careers as an active scientist that can be claimed by any man now living. Son of a college president, he did his first college teaching at sixteen, and he is now in his eightieth year. He has been honored by many leading scientific organizations in the United States and Europe. Yet he has twice suffered exile from his native land because of his activities as a patriot. Each time, however, changing conditions have permitted him to return to his home with honor.

Dr. de la Torre is at present working with Dr. Paul Bartsch of the U. S. National Museum, and the two men expect to publish a number of scientific papers together.

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MEDICINE

Caring For Child After Infantile Paralysis

PREVENTING crippling, deformity and disability is the big job that now faces parents and physicians of children who suffered an attack of infantile paralysis during the epidemic this year.

This preventive work must be started as soon as paralysis appears. By paralysis is meant "any recognizable degree of weakening in muscle strength, and not necessarily a total or even an extreme loss of power," one authority explains.

The first step in the preventive work is to keep the patient at rest and to prevent, by suitable braces and supports, the stretching of weakened muscles. This is most important. If the patient tries to walk or use his arms and legs too soon,

the stronger muscles will pull the weak ones out of shape and the deformity will be worse and harder to correct.

Muscle training or reeducation should not be started until pain or tenderness in the muscles has disappeared. After all tenderness has gone, the physician will make a careful examination to detect which muscles are affected. Then he will prescribe the exercises for training and strengthening the affected muscles.

Nerve Cells Destroyed

In infantile paralysis, certain nerve cells supplying a muscle are destroyed. Those that are left are not used to working together and do the job badly and without coordination. By proper exercises these nerves can be trained to work together with precision. The exercises not only improve the coordination of the nerves but improve the nourishment of the muscle fibers.

Muscle training should be done only under the direction of a trained person who understands muscle function. It should be carried out gradually. Over-fatigue must be guarded against. Swimming does not take the place of localized muscle training. Exercises can be done more pleasantly and easily under water but the same exercises done on a table will produce equally good results.

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At the recent children's festival in Moscow, the zoo gave young visitors 15,000 "live presents" including parrots, squirrels, and fox cubs.



DR. CARLOS DE LA TORRE

This Cuban naturalist has accounted for the presence of Cuban land snails in Florida.

SURGERY

Delicate Surgical Operation Enables the Deaf to Hear

Only One Type of Deafness, Otosclerosis, Is Improved And Only the Skilled Can Undertake New Technique

A DELICATE surgical operation which promises the seeming miracle of making the deaf hear again has been reported by Prof. Maurice Sourdille, of the School of Medicine at Nantes, France, to the New York Academy of Medicine in New York.

The feat has been accomplished by special technics developed by Prof. Sourdille. The new operation will not bring hearing to every deafened person. Even those shown by careful tests to have a hearing defect suitable for correction by this operation can not hope to have the operation performed at present.

Much study of the method and of results so far accomplished are necessary before the operation will be performed universally on a large scale. This caution was made perfectly clear by both Prof. Sourdille and Dr. Edmund Prince Fowler of New York, who acting as chairman of the meeting, introduced Prof. Sourdille.

One of the chief obstacles to immediate application of the new technic on large numbers of patients is the difficulty of performing it. Prof. Sourdille uses both magnifying glasses and microscope in this operation. Complete and permanent loss of hearing and even death may result if the surgeon has not the necessary skill. The operation must be performed in three or four stages, several months apart, in order to lessen this danger, and the patient must remain in a hospital in order to have the wound dressed every day.

Another obstacle is the difficulty of selecting suitable cases. The operation is designed to relieve deafness due to otosclerosis, the condition in which hearing is lost because of bone formation in the opening into the inner ear. This prevents the passage of sound waves from the outside to the nerves of hearing in the inner ear.

Prof. Sourdille's operation provides a new circuit for the sound waves. He cuts a hole through the bone into the inner ear to provide a substitute passage for sound in place of the one

blocked by the abnormal formation in otosclerosis.

This has been done before by other surgeons, and the patients heard again, but the restored hearing was often not permanent. It lasted for a few days or at most months, because the new opening closed up. To overcome this difficulty, Prof. Sourdille has devised a method of covering the new opening with a flap of scar tissue obtained from the ear canal. These procedures permit the sound waves to go through to the nerves of hearing but keep the new opening from closing. Some of the patients operated upon by Prof. Sourdille have retained the improvement in hearing for as long as eight years, which is the longest interval since he performed the first successful operation by the new technic.

In properly selected cases good results can be expected in from 70 to 80 per cent., Prof. Sourdille said. No other method, either surgical or medical, has ever before been so successful in maintained restoration of hearing in proved cases of otosclerosis, it was pointed out.

This condition of abnormal bone formation in the inner ear exists in 1 out of every 20 adults. Less than one-fourth of these, however, are deafened by the condition. Not all otosclerosis patients are deaf because of the otosclerosis. Other defects which may exist along with the otosclerosis are responsible for the deafness in some of the cases. It was pointed out that treatment which restores hearing is sometimes effective because it clears up these other conditions. Consequently physicians, although impressed by Prof. Sourdille's results, are inclined to temper their enthusiasm with caution. Patients are warned not to insist on the operation unless tests show they will benefit from it, and unless skilled surgeons are available.

More important, perhaps, than the benefits received by the 140 patients whose hearing was improved by Prof. Sourdille is the fact that his work opens a new field of research into the causes of otosclerosis. Some of his results sug-