

EDUCATED SNAIL LEARNS TO SPEED

A snail may be a bit slow, but he can be made to learn by experience. At least that was the experience of Mary Pinkey Mitchell's trained snail, a story told in Science. Miss Mitchell is a student in the department of education psychology at the University of Denver, and her success in educating the humble snail is reported by Prof. Thomas R. Garth of that institution.

The snail was taught to find his way out of a maze. The impulse which compelled him to do this was a powerful light, from which he sought to escape, as snails prefer darkness. Also, they like to hibernate in the winter, but this little pet of science was kept on the job by warming him in a improvised incubator.

He rewarded the trust imposed upon him. The average time of his exit from the maze in his first five trials was 857 seconds, while for five recent trials he averaged only 316 seconds. It only took him 102 trials to accomplish this. In the first five trials he made four errors; now he makes no errors at all and is getting speedier and speedier every day with the prospect that he will soon attain the maximum speed of which snails are capable.

His performance indicates, his preceptors say, "learning of a more or less permanent character". At least he has learned something from his own mistakes, and his speed is considerable when one considers the weight of his name. It is "Goniobasis pleuristriata Say". No doubt he prefers to be addressed by it for he is an educated snail.

READING REFERENCE - Kellogg, Vernon L. Mind and Heredity, Princeton, Princeton University Press, 1923.

GRADUATED AMPLIFIERS FOR HARD OF HEARING

Three stage amplifiers, with means for delivering voice currents of several different volumes, is the latest method of helping the partially deaf to hear. Prediction of the eventual equipment of all places of public assembly with such devices was made by Dr. Harvey Fletcher in an address to a convention of the American Federation of Associations for the Hard of Hearing at Washington. Many of his audience were using such a system.

Loudness alone is not the open sesame for the hard of hearing, according to Dr. Fletcher. Studies made under his direction in the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company show that people whose hearing has been reduced by more than 60 per cent. can possibly be benefited by an amplifier, but they will never be able to understand what is said as well as persons whose hearing is better than 60 per cent. Hence the disappointment of many whose desire to reestablish communication with their fellow men has led them to believe extravagant claims of certain unscrupulous deaf set manufacturers.

In explaining to his audience how the proper loudness is determined, Dr. Fletcher brought out several interesting points. A person having 30 per cent. hearing than normal will have little difficulty in understanding ordinary conversation at three feet from the speaker. One having 40 per cent. less would miss

many consonants, but could still follow the conversation by paying close attention. One who has 50 per cent. loss can hear only the vowel sounds, and cannot understand unless the speaker talks loudly or close to his ear. With a 60 per cent. loss, nothing would be heard at all with the speaker three feet away, but by talking as loudly and close to the ear as possible, much can be understood. For greater deafness, no amount of loudness will be of much service, as the upper limit of the ear's response has been reached, and further increase will be painful or even injurious.

As a practical means of telling whether any device will be of assistance, Dr. Fletcher gave the following simple test: Have a friend speak simple sentences directly into your ear. If you can interpret them without difficulty, then a hearing aid can be designed which will make it possible to obtain the same interpretation. But if the speaker raises his voice to a very loud tone and you are still unable to understand, then probably no aids on the market can assist you.

The fallacy that deafened persons can hear better in noisy surroundings was disposed of by Dr. Fletcher with this explanation: The affect of noise is the same as an impairment of hearing. Noise in the average room is equivalent to a 20 per cent loss of hearing; New York's subway racket is as serious as 48 per cent loss. Hence in a subway train the man of 48 per cent deafness is on a par with his normal companion. Both shout, and both are heard equally well - or ill.

ORGANIZATION TO STUDY TROPIC PLANTS

Recognition of the large and increasing importance of the part played in the economic life of the temperate zones by the products of the plants of the tropics is seen in the incorporation of the Tropical Plant Research Foundation, by some of the leaders in the United States in the knowledge of tropical plants. The foundation was initiated during the past year by a committee of the National Research Council and was incorporated June 6 in the District of Columbia.

The particular objects of the Foundation will be to promote the study of the plants and crops of the tropics; to conduct investigations and to publish the results of them; and to establish and maintain such temporary or permanent stations and laboratories in tropical countries as may be necessary for the accomplishment of these objects.

The necessity for this study is stated by the organizers of the Foundation to be the economic dependence of the temperate zones upon the tropics, from which come many of the necessities of modern life. This dependence will increase in the future. The quantities of sugar and oils, fiber and rubber, coffee and cacao, fruits and vegetables, that are imported annually are only the vanguard of the future supplies that will be drawn from the tropics. The production, preparation, and shipment of these products involve problems that have as yet received little study. With the exception of the areas under the immediate jurisdiction of the United States, the tropical agriculture of the Western Hemisphere does not have the counterpart of the governmental and institutional agencies which contribute so much to crop production within the United States.

The industrial importance of the scheme is recognized in the Board of Trustees, four of whom will represent industry. The other five will be scientists chosen from several national societies more closely identified with the projected