

The strains of *Bacterium granulosis* obtained by us agreed culturally in all respects with the Noguchi bacterium. Two were tested individually in *Macacus rhesus*, both inducing the characteristic granular lesions of the conjunctiva. Three other strains isolated by us, when pooled and inoculated, produced in four of five monkeys typical experimental trachomatous lesions of marked severity, appearing first on the twelfth day and progressing to abundant development during the following six weeks.

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THE PASSENGER PIGEON

It is commonly believed that the passenger pigeon, so frequently seen through the middle west about fifty years ago, has ceased to exist on this continent. Several reports to the contrary have appeared from time to time, but it has usually been concluded by those in a position to know that these reports have concerned either the dove or the band-tailed pigeon from the west.

An article in the *Detroit News* for January 5 by Mr. Kendrick Kimball, staff correspondent of the *News*, reports some observations of interest made by Mr. Robert H. Wright, of Munissing, Michigan (Upper Peninsula), and by Dr. Samuel R. Landes, of Traverse City. The former is said to have observed a pair of passenger pigeons on highway M-28, about sixteen miles from Munissing, on June 10, 1929. They were in the road and he approached within ten feet of them—sufficiently close for him and his family to note the sheen on the neck and the red eyes. Dr. Landes, driving from Florida, observed a flock of about fifteen between Indianapolis and Kokomo. Both these men were said to be quite familiar with this species, having hunted and plucked hundreds of the birds in Michigan and Missouri, respectively, in the late seventies.

The article by Mr. Kimball has served as the incentive for me to report an observation made in the wilds of the North Peninsula of Michigan during the second week of September last.

An old friend, Mr. Foard, of Marquette, and myself were finishing a day devoted to running out lines of a tract of some six hundred acres of my summer camp on the north shore of Lake Huron, near Beaver Tail Point, about twelve miles east of Les Cheneaux. The country is wild, practically uninhabited, and lies mostly in "burnings" interspersed with patches of fresh growth of spruce, poplar and some old timber.

About six-thirty in the evening we were still some five miles from camp, pushing a line through the

scrub and attempting to locate a trail. We had just paused to get our direction when Mr. Foard pointed to the top of a tall, dead white birch and said, "There's a passenger pigeon; I have seen several the last few years." I had to turn in order to look, and then the bird was already in flight, perhaps a hundred feet away. All that I could see was that it had the shape of a pigeon and a somewhat pointed tail. Mr. Foard had the better view and had seen the bird several moments before he spoke. While I can not therefore verify this report, I have great faith in Mr. Foard's powers of observation. His entire life has been spent in the woods of northern Michigan, as land agent and trespass agent for the government. Few in the state, I dare say, know more about the denizens of the Michigan woods than he. The deer, the bear, the timber-wolf and the birds have been his companions for forty years, and he knows them and their ways. As he told me when we continued our way homeward, discussing the strange disappearance of the passenger pigeon, he had often hunted the birds in the years around 1878 in this same country and knew them too well to be mistaken. Since their long disappearance he had seen none until quite recent times.

It seems to me that these three observations by Michigan men, all of whom knew the passenger pigeon in the old days, serve seriously to raise the question that has been propounded by Mr. Kimball in his newspaper article: "Has the passenger pigeon come back?" The northern peninsula of Michigan was once a famous nesting ground for this species, and it is hoped that the residents of this delightful region will continue to make special effort to recognize and report this assumedly extinct species whose sudden disappearance constitutes one of the greatest recent biological tragedies of the American continent.

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SEVERE HAIL INJURY TO TREES AND SHRUBS

ONE evening last summer, as the writer was returning home from a trip through southern Illinois, his attention was attracted by the peculiar appearance presented by the trees growing in a cemetery at the north edge of Marion, the county-seat of Williamson County, Illinois. As seen from the road, the foliage on practically all these trees appeared to be in crowded, rosette-like bunches on the larger limbs, while the small limbs were conspicuously dead and barren. It was almost dusk at the time, and as there were many miles yet to be driven, there was little inclination to tarry long enough to make a detailed examination of the trees. Later, however, on another trip to the locality, made on October 13, in company with Dr. Benjamin Koehler, crop pathologist at the

University of Illinois, a close examination was made of these trees and of the shrubs growing with them.

It was at once apparent that early in the season the trees had been stripped of their young developing foliage and small twigs and that the larger twigs and small limbs had been killed by some excessive injury. These stood out in the picture dead and barren against the greenness of a second growth of foliage and young twigs which, on all the trees, had since grown out very abundantly from a multitude of adventitious buds. The general aspect of these trees was such as to remind one of the war pictures of shrapnel-swept battlefields, where broken trees stand here and there denuded of their leaves after the bombardment. Truly these trees had been bombarded, for a terrific storm of hail had swept this area in the previous spring.

The numerous and markedly compacted bunches of new foliage, which from a distance appeared so much like rosettes, were generally abundant in all parts of the trees, in many cases even to the extent of growing out densely up and down the trunks, as if the trees, in a desperate effort to retain their hold on life, had made use of all their resources to reclothe themselves with leaves.

A close examination of the twigs and limbs of the trees, which were mostly maples and oaks, revealed severe hailstone lesions on the upper sides. These were frequently an inch or more long and often coalesced to form long compound lesions which, in many cases, resulted in a virtual girdling of the part.

From the many smaller branches and twigs which had been killed, in some cases for several season's growth back, by the excessive loss of cambium the bark was still peeling where it had not previously been stripped off by the hailstones.

The lesions on the still living twigs and small limbs were healing over very nicely with no sign of infection of any sort. The approaching layers of new tissue from the two sides of the long narrow lesions had, in the case of the smaller ones, already met, and in other instances, where the injury had extended half to three quarters of the circumference of the twig or limb, the healing process, although progressing very nicely, was not yet finished. The condition presented an excellent example of wound healing such as one is not often likely to meet with under ordinary circumstances.

On small ornamental junipers and Japanese barberry in the cemetery the foliage appeared normal, but a close examination of the twigs of these shrubs revealed severe hailstone lesions which, as in the case of the trees, were healing over very nicely.

Upon inquiry, the writer was informed by a local resident that on the first of May, 1929, a most severe

hailstorm had occurred as a general disturbance over the entire locality but that the fall of hail had been exceedingly severe over the cemetery where, judging from the damage done, it had occurred in a path about two or three hundred yards wide from north to south. On neither side of this path did the vegetation show any such evidence of severe injury as was inflicted on the cemetery trees.

The hailstones were reported to be very large, almost the size of small hen's eggs. Automobile tops which were exposed to the storm were reduced to sieves by the bombardment. Hailstones of this size have occurred in Illinois before, although they have not been known by the writer previously to inflict such severe damage to trees. In the spring of 1927 particularly severe hailfall of very large stones occurred at Urbana and in the East St. Louis area as well as in St. Louis, Missouri, when great damage was done to houseroofs, greenhouses and automobile tops. At that time the Missouri Botanical Garden suffered severe damage to its greenhouses and to the very valuable plants contained in them.

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MAN-MADE EARTHQUAKES

ON October 18, 1929, between midnight and sunrise, slight earth tremors were felt at Big Springs and nearby towns in Texas. People were very generally awakened by the rattling of dishes and windows. One person at Big Springs states that he was awakened about 3 A. M. by what he thought at the time was an automobile hitting the house in which he was sleeping. Another says he was awakened at about this time thinking some one was rattling his door. At one place south of Stanton a lamp chimney was broken, and at another the glass in a door was fractured. Five or more distinct tremors were felt of which the last, occurring about daylight, was said by some to be the strongest. On the following night similar tremors were felt although apparently by fewer persons. Some who had lived in earthquake regions were positive that the tremors were earthquakes.

Inquiry made in the region affected indicated that the tremors were caused by explosions of dynamite made in connection with the use of the seismograph in geologic explorations. The company making these explorations very kindly supplied a record of seismograph shooting on October 17, 18 and 19, and this note is made to record the distance that such earth tremors from seismograph shooting may be transmitted under favorable conditions in sufficient force to attract general attention.