other respects characteristic tubercle bacilli, may be grown in the depth of culture fluids, an observation which we[3] have just confirmed and extended.

In our papers,[4] which the authors quote among their examples of "misnamed cultures and studies of the tubercle bacillus," we demonstrated that a series of cultures of tubercle bacilli recently isolated from active tissue lesions and cultures with a history of maintained virulence exhibit certain characteristics, characteristics which without question place them as belonging to the species. Certain of these have been shown to dissociate into avirulent forms which exhibit certain characteristics at variance with the classical definitions. These observations are in agreement with and in extension of the work of the authors mentioned in the previous paragraphs. At the same time, we pointed out that a series of avirulent cultures and cultures with a history of loss of virulence exhibit characteristics which relate them to the forms known to have arisen by dissociation from characteristic tubercle bacilli. Professor Hastings and Dr. McCarter advance interesting historical evidence that one of the latter should be regarded as an acid-fast saprophyte rather than a tubercle bacillus.

Work of the last decade has established beyond cavil the fact that bacteria are subject to variation. Variation of the tubercle bacillus is imperfectly understood, but the results and theories so far advanced are in complete agreement with the more extensive data accumulated concerning other groups. Studies of the tubercle bacillus will not be promoted by defining the species in such conservative terms as to exclude the variants which we observe.

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THE SWARMING OF ANTS

ON Sunday afternoon, September 4, 1932, as I was returning from a walk in the country, I noticed several winged ants (*Tapinoma humilis*) in the air. By the time I reached home, there were great swarms of them everywhere. I examined my front lawn, and found great excitement among the ant colonies. Workers, winged queens and winged males were running here and there around their entrances. The entire lawn was a seething mass of ants. The winged forms were rapidly leaving the ground, and taking to the air.

On my coat I found many males, apparently exhausted and unable to fly away when I tried to shake them off. They had mated with some flying queen a few minutes before, I assumed. Before an hour had passed, I noticed numerous males on the ground, helpless, and apparently dying. Some were being dragged away by workers, which appeared to be attacking the males as though helping to kill them.

At the end of another hour there were many mated queens crawling about on the ground and on the grass blades. As I watched them, I found several in the act of tearing off their own wings. They had evidently mated while in flight, and were now ready to settle down to their business of rearing a family. Soon there were countless queens stripped of their wings crawling about everywhere, seeking new homes. There were also many queens which did not tear off their wings.

As darkness approached, the air cleared up, and no more flying honeymoons were in evidence. The excitement of the colonies was dying down, and the queens were disappearing in various crevices and holes. There were still many males crawling about in a semi-stupor. A careful look over the surface of the ground revealed hundreds of delicate wings which had been shed by the mated queens. As darkness fell, all was again quiet.

My attention was first called to the flying ants about three o'clock in the afternoon, Central Standard time. Their numbers seemed to be greatest between four and five o'clock, and by six o'clock, the affair was waning. By seven-thirty, all was quiet. I inquired to find out whether this swarming was very extensive, and learned that it covered most of this state as well as adjoining states. I do not know how much farther it extended. Tourists stopping at the gasoline stations that same evening, reported having driven through swarms of them for several hours over a distance of a hundred miles or more.

The next morning I examined my lawn again, and found no indications of the previous day's rendezvous, aside from the many wings scattered about like the remains of some aeronautic battle. A few wingless queens were found, and a number of dead males were uncovered. The workers had apparently cleared away the débris as much as possible. All was peaceful and industrious. Life had once more settled down to routine matters.

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THE GROWTH OF STALAGMITES

THE brick part of Fort Morgan (at the mouth of Mobile Bay, Alabama), where the data in this communication were observed, was built in 1855. Active use was made of this portion of the fort until after the Spanish-American War, when it was abandoned.

[3] G. B. Reed, *Canadian Journal of Research*, in press.
[4] G. B. Reed and C. E. Rice, *Canadian Journal of Research*, 4: 389, 1931; 5: 111, 1931.

The rooms containing the stalactites and stalagmites are similar to those described by Professor Ellis in SCIENCE for January 16, 1931. The roof and walls are four feet thick and are made of brick set in lime mortar. The roof is covered with vegetation, as at Fort Pickens. Apparently the date of construction, the date of abandonment and the climatic conditions agree with the corresponding elements in the situation at Fort Pickens, which is fifty-five miles due east on the shore of the Gulf of Mexico.

At the time of my last visit water was still dropping very slowly from the ceilings—the result of a recent torrential downpour caused by a hurricane. Scores of stalactites were noted in each of a dozen rooms, the longest being eight inches. The caretaker said that tourists break off the longest. The stalactites are about the thickness of a lead pencil, are hollow inside and quite frail.

On the floors were noted a number of stalagmitic deposits, broad and low in make-up, overlying the charred remains of roof-timbers and window-casings that the caretaker said had fallen as a result of a fire in the year 1930. The largest stalagmitic deposit seen on a charred timber was three fourths of an inch high and eight inches in diameter. Hence it would seem that it had grown three fourths of an inch in two years.

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SCIENTIFIC MEETINGS

THE SIXTH INTERNATIONAL CONGRESS OF GENETICS

THE sixth International Congress of Genetics was held from August 24 to 31, inclusive, at Cornell University, Ithaca, N. Y. The registered members numbered about 700, of which 550 were in attendance. In spite of adverse economic conditions there was a representative and distinguished group of European geneticists on hand.

Official delegates from foreign governments were as follows: *Belgium:* M. le Prof. L. Frateur and M. le Prof. R. Vandendries; *Chile:* Señor Don Manuel Elgueta y Guerrin; *Denmark:* Prof. Dr. Ojvind Winge; *Finland:* Prof. Harry Federley; *France*: M. le Prof. A. Vandel; *Great Britain:* Professor R. Ruggles Gates, Ph.D., F.R.S., and Professor. F. A. E. Crew, D.Sc., Ph.D.; *Italy:* Prof. Alessandro Ghigi, Prof. Cesare Artom, Prof. Fabio Frassetto, Prof. Corrado Gini and Prof. Carlos Jucci; *Norway:* Prof. Dr. Otto Lous Mohr; *Spain:* Señor Don Antonio de Zulueta y Escolano.

The program consisted of a series of invitation papers on special topics; contributions from members of the congress either as papers or exhibits; meetings of the congress as a whole in two plenary sessions, as well as of various groups interested in special topics; and social events.

The morning sessions numbered five with the following programs:

1. *General Genetics:* Professor T. H. Morgan, *chairman*
   (a) "Mendelism in Man," Dr. C. B. Davenport, Cold Spring Harbor, N. Y.
   (b) "Inheritance of Educability," Dr. F. A. E. Crew, Edinburgh.
   (c) "The Use of Mosaics in the Study of the Developmental Effects of Genes," Dr. A. H. Sturtevant, Pasadena.
   (d) "The Present Status of Maize Genetics," Professor R. A. Emerson, Ithaca, N. Y.
2. *Mutations:* Dr. C. B. Davenport, *chairman*
   (a) "On the Potency of Mutant Genes and Wild-type Allelomorphs," Dr. O. L. Mohr, Oslo.
   (b) "Mutations of the Gene in Different Directions," Dr. N. Timoféeff-Ressovsky, Berlin-Buch.
   (c) "The Genetic Nature of Induced Mutations in Plants," Professor L. J. Stadler, Columbus, Missouri.
   (d) "Further Studies on the Nature and Causes of Gene Mutations," Professor H. J. Muller, Austin, Texas.
3. *The Interrelations of Cytology and Genetics:* Dr. R. Ruggles Gates, *chairman*
   (a) "The Cytological Basis for Crossing-over," Dr. Karl Sax, Forest Hills, Mass.
   (b) "Neuere Ergebnisse über die Genetik und Zytologie des Crossing-over," Dr. Curt Stern, Berlin-Dahlem.
   (c) "The Nature of Sex-chromosomes," Dr. O. Winge, Copenhagen.
4. *Genetics of Species Hybrids:* Dr. W. E. Castle, *chairman*
   (a) "The Species Problem in *Datura*," Dr. A. F. Blakeslee, Cold Spring Harbor, N. Y.
   (b) "Konjugation der artfremden chromosomen," Dr. H. Federley, Helsingfors.
5. *Contributions of Genetics to the Theory of Organic Evolution:* Dr. R. Goldschmidt, *chairman*
   (a) "Genetik der geographischen Variation," Dr. R. Goldschmidt, Berlin-Dahlem.
   (b) "The Process of Evolution in Cultivated Plants," Dr. N. Vavilov, Leningrad.
   (c) "The Evolutional Modification of Genetic Phenomena," Dr. R. A. Fisher, Harpenden.
   (d) "Can Evolution be Explained in Terms of at Present Known Genetical Causes?" J. B. S. Haldane, Merton.