

positions of these bundles of fibers, as has been partly done with much value in the optic nerve. Just as the older anatomists recognized that the "portio molis" and "portio dura" could be wholly differentiated into the acoustic and the facial nerves of different origin and function, and as later research is separating the cochlear from the vestibular and intermediary nerves, so it is our part more minutely to differentiate these trunks into their components and by tracing their encephalic course to improve our diagnostic possibilities, with further practical refinements in localization. To this good task we invite the aid of all our colleagues.

FURTHER EXPERIMENTATION IN ANIMALS WITH A MONILIA COMMONLY FOUND IN SPRUE.¹

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In a paper read before the Association of American Physicians May 13, 1915, entitled "Studies in Moniliasis of the Digestive Tract in Porto Rico,"² and in one read before the Medical Society of the District of the North of Porto Rico, March 18, 1915,³ reference is made to incomplete results of animal experimentation with a new monilia found in sprue, promising additional observations. This paper is in continuance of these experiments, and although experimental moniliasis in animals is yet in its infancy, nevertheless, some striking results in a short series seem to warrant prompt mention, the writer realizing, however, that these rapid preliminary investigations should only be understood as mapping out future and more elaborate lines of study.

As will be seen by reference to the above-cited papers and others of recent date, "Is Sprue a Moniliasis of the Digestive Tract,"⁴ and "The Dietetic Treatment of Sprue,"⁵ there is justification for considering Bahr's opinion that sprue is due to a monilia as correct, as well as for admitting, as will be seen, that this organism is not *Monilia albicans*, at least in Porto Rico, but as far as can be determined a distinct and heretofore undescribed species, which I have

¹ Read by title before the Academy of Medicine of Porto Rico.

² *Am. Jour. Med. Sci.*, 1915, cl, 680.

³ *Jour. Am. Med. Assn.*, 1915, lxiv, 1893.

⁴ *Am. Jour. Trop. Dis. and Prev. Med.*, 1915, iii, 32.

⁵ Now being published by *Am. Jour. Trop. Dis. and Prev. Med.*

7. In such animals the symptoms depend on the part of the intestinal tube must affected, in the portion in which these monilia secure their first foothold.

8. A certain number of animals exposed by feeding, rapidly die of a monilia septicemia believed by me to be due to a sudden primary pneumonia and secondary septicemia.

9. Animals escaping this fate succumb more slowly to what seems to be a toxin developed in the intestinal tract by a localization of these monilia.

10. Feeding experiments have resulted in the production of a stomatitis on two occasions and in the appearance of severe and long-continued diarrhea in several occasions.

11. Monilia septicemia causes the necrotic areas in animal organs referred to as "white spots" macroscopically. This has been verified microscopically in kidneys, and presumed to be the same for all organs so affected. Such organs are highly congested, dark red, and friable.

12. Localized in the skin, typical blastomycotic ulcers are formed whose characteristic is necrosis without pus formation. If an internal organ is attacked large colonies of monilia are seen which look like emboli. Intervening spaces are generally free from the organism. This explains a casual failure to obtain a successful culture from an evidently infected organ, and thus differs radically from a bacterial septicemia.

13. Microscopically, infected organs show large clumps of monilia surrounded by an intense inflammatory zone. I have never seen pus produced by monilia.

14. In one guinea-pig presenting a severe stomatitis, sections of the affected zone revealed monilia in the midst of the muscular bundles below the subepithelial connective tissue. This may explain the tendency for sprue to recur after an apparent dietetic cure: the yeasts are starved out in the surface; the patient apparently recovers, and, later, the deep lying roots of the mycelia layer push out toward the surface and reestablish a surface growth with its consequences and a relapse.

15. In experimental animals in whom mycotic septicemia is induced by intraperitoneal injection the lungs are the most grossly affected; after them the kidneys and microscopic examination corroborate the gross anatomy.

A forthcoming monograph is contemplated with detailed description of morphological and cultural studies of this organism, and illustrations drawn by the artists of the Institute.

My acknowledgements are made to Drs. W. W. King and González Martínez for valuable assistance in autopsies, and to Messrs. José Loubriel and Damián Artau, Technical Assistants of the Institute, for assiduous care of animals and assistance in autopsies.