

neurological bases of reflex and tropistic action and the classical experiments in this field; summaries of points of view of Freud, Jung, Adler and Meyer, together with the general concepts of psychoanalysis, such as the unconscious, and the technique of psychotherapy; the presentation of cases under his treatment in the hospital at Washington and in the war hospitals of France; the neurological bases for sensations of voluntary movements; brief and consistent historical sketches and commentaries on each topic; presentation of the specific fundamental evidences on "both sides" of moot questions; new concepts of *psychotaxes* or the tendencies of the mind to adjust itself to pleasant and unpleasant situations of a mild sort, and *parataxes*, or borderline cases of abnormal emotional adjustments exaggerated beyond psychotaxes but not yet become psychoneuroses; emphasis on the synthetic counterpart necessary to analysis in mental troubles; the idea of a plan of life as a means of seeing your own way out of mental troubles and for rebuilding abnormal lives; a glossary of technical terms and the up-to-date references to periodical literature.

The author differs from many text-book writers on certain points such as the driving forces of human nature, which he considers to be impulses or abilities, many in number. Affective mental states are independent forms of mental life, not merely attributes of sensations, but arising from them and from intellectual insight. The Lange-James theory is reversed, to state that intellectual insight into a situation is the cause of an emotion, which in turn produces complex bodily resonance, in part specific and in part common to all emotions. His chapters on the freedom of the will and the soul arise from the discussion of voluntary action.

Adversely, it may be said that the book is not usable as a basic text for elementary courses because of the almost total neglect of the cognitive processes; such as, sensation, perception, imagery, imagination and learning, memory and thought processes and most of the special senses and capacities. It does not cover the field of general psychology. Whereas the treatments are dualistic or vitalistic in most cases, the titles are behavioristic and misleading to this extent. The classification of mental capacities is unserviceable.

As a whole the book forms a very readable presentation of the special fields of reflexes, kinesthesia, volitional and abnormal psychology and psychotherapy. The well-written historical and critical sketches which introduce each topic recommend it for use as a special reference in these fields as well as an introduction for the general reader.

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*Catalogue of the Mycological Library of Howard A. Kelly.* Compiled by LEUIS C. C. KRIEGER. Baltimore, privately printed, 1924.

THIS sumptuous volume of 260 large octavo pages is a valuable contribution to the bibliography of American botany. The preface comprising five pages gives the acknowledgment of Dr. Kelly to the botanists and mycologists, past and present, who encouraged or gave aid to his mycological studies begun while he was a resident of Philadelphia. The contents of this finely bound book are arranged alphabetically. Then follows a description of exsiccata, periodicals, floras and miscellanea. The student of fungi and the working mycologist can hardly afford not to have this catalogue in their libraries. It will be indispensable to the botanical libraries of our colleges and universities. The compiler, Mr. Krieger, is an artist and mycologist of note, trained artistically at the Royal Academy of Fine Arts in Munich.

PHILADELPHIA, PA.

JOHN W. HARSHBERGER

## SPECIAL ARTICLES

### COCONUT BUD ROT EXPERIMENTS IN PORTO RICO

COCONUT bud rot has appeared in epidemic form on the western coast of Porto Rico, more than eight hundred cases having been recorded between Mayaguez and Rincon. The earliest observable symptom of the disease is the death of the youngest folded leaf, followed quickly by the death of other young vertical leaves which collapse and fall away, leaving the palm conspicuous by the absence of a central column of young leaves. The older leaves retain their normal color and position for several months, falling away one by one until the trunk is left naked. When a diseased bud is examined a brown decayed spot is usually found near the base of a young petiole. As underlying petioles are examined the decayed area is observed to increase in size and softness. The generative tissue is completely involved in a soft, watery, malodorous rot. There is no recovery.

A fungus was isolated from diseased buds and described as a small chlamydospored strain of *Phytophthora faberi* Maublanc. It grows well on culture media, produces abundant conidia and chlamydospores, and probably does not produce oospores. The conidia and chlamydospores germinate ordinarily by pushing forth several germ tubes, and germination by zoospore formation has not been observed. The conidia are 52.67 by 30.95 microns when measured from 8- to 10-day-old corn meal cultures. The average ratio of length to diameter is 1.69. The chlamydospores have an average diameter of 34.88 microns when grown on potato dextrose agar and corn meal. This figure is considerably smaller than the ones given

for *P. faberi* by Delacroix and Maublanc,<sup>1</sup> Rosenbaum<sup>2</sup> and Reinking.<sup>3</sup> The fungus is pathogenic to wounded tomatoes, potatoes and green coconuts, but not to cacao pods, in this respect differing from Reinking's strain and corresponding to a *Phytophthora* isolated from coconuts in Jamaica by Ashby.<sup>4</sup>

Inoculations have demonstrated that this strain of *P. faberi* may cause the death of wounded or unwounded mature palms with the appearance of typical bud rot symptoms. Results obtained from wounding are not considered reliable, since wounded uninoculated palms exhibited pathogenic symptoms and in some instances died. Penetration of the generative tissue may occur laterally through the leaf bases or vertically through young leaves.

Bacteria resembling *Bacillus coli* (Escherich) Migula, regarded by Johnston<sup>5</sup> as the cause of bud rot in Cuba, were isolated from diseased buds. Inoculations demonstrated the inability of the bacteria to penetrate healthy mature palms. When injected into wounds the resulting decay could not be distinguished from that which occurred in the wounded checks.

High precipitation, at least during a few months of the year, is considered the most important factor in the development of epidemics of bud rot.

Eradication of diseased palms has been found efficacious in reducing the incidence of the disease in an experimental grove.

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## AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

### ADDITIONAL REPORTS ON THE FIFTH WASHINGTON MEETING

It was planned that reports of all sections and societies that met with the American Association at

<sup>1</sup> Delacroix, G., and Maublanc, C., 1909, "Les Maladies des Plantes Cultivées dans les Pays Chauds. Maladies du Cacaoyer." "L'Agriculture Pratique des Pays Chauds," 9: 314-318.

<sup>2</sup> Rosenbaum, J., 1917, "Studies of the Genus *Phytophthora*," *Journ. Agr. Research*, 8: 233-276.

<sup>3</sup> Reinking, Otto A., 1923, "Comparative study of *Phytophthora faberi* on coconut and cacao in the Philippine Islands," *Journ. Agr. Research*, 25: 267-284.

<sup>4</sup> Ashby, S. F., 1921, "Relation between cacao pod rot and coconut bud rot," *Agricultural News*, Barbados, 20: 318.

<sup>5</sup> Johnston, John R., 1912, "The history and cause of the coconut bud rot," U. S. D. A., Bur. Pl. Ind., Bull. 228, p. 1-175.

Washington should be published together in the special enlarged issue of SCIENCE for February 6, but when the reports were assembled they were found to overrun the available number of pages. It seemed best to meet this difficulty by including in the special issue only reports bearing on the association as a whole, reports for the several section organizations themselves and reports for a few societies in fields that are related to a number of sections or to scientific thought in general. The remaining reports are to appear in later issues of SCIENCE and the first installment is published below. The reports are to be arranged in the order of the entries of the societies in the general program of the meeting, in groups corresponding to the several sections of the association to the fields of which they are most closely related.

A complete list of the scientific organizations that met with the association at Washington follows, in the order mentioned above: (A) The American Mathematical Society, The Mathematical Association of America and the Pi Mu Epsilon Fraternity. (B) The American Physical Society and the American Meteorological Society. (D) The American Astronomical Society and the International Astronomical Union. (E) The Association of American Geographers and the National Council of Geography Teachers. (F) The American Society of Zoologists, the Entomological Society of America and the American Association of Economic Entomologists. (G) The Botanical Society of America, the American Phytopathological Society, the American Society of Plant Physiologists, the American Fern Society and the Wild Flower Preservation Society. (F-G) The American Society of Naturalists, the Ecological Society of America, the American Microscopical Society, The American Nature-Study Society, the Phi Sigma Biological Society and the Genetics Sections of the American Society of Zoologists and the Botanical Society of America. (H) The American Anthropological Association and the American Folk-Lore Society. (I) The American Psychological Association. (K) The Metric Association and the American Political Science Association. (Reports of both these organizations have been published in SCIENCE for February 6.) (L) The History of Science Society. (Report already published, as above.) (N) The Society of American Bacteriologists, the Annual Conference of Biological Chemists and the Federation of American Societies for Experimental Biology. (The report for the Federation in general has been published, as above, but reports for the four constituent societies are still to appear. These societies are: The American Physiological Society, the American So-