time. It was not until the summer of 1905, however, that their spread became conspicuous. The snails are active in the early morning while the trees are moist from the dew of the previous night. During the afternoon they gather in sheltered parts of the tree, or under pieces of sacks placed in the tree for the purpose, and are easily transferred in this way from grove to grove. Snails thus introduced into the Harrison grove at Palmetto in March increased in numbers rapidly and thoroughly cleaned the tree on which they were placed by mid-summer.

Considering the fondness of the snails for the injurious saprophytic fungus *Meliola,* it becomes of first importance to inquire into their treatment of the beneficial parasitic fungi. Among the fungi parasitic on orange insects five species in particular are of inestimable benefit to the orange grower. These are: the 'brown fungus'; the red-pink fungus, *Aschersonia aleyrodis* Webber; a bright red fungus, *Sphærostilbe cocophila* Tul.; the 'gray-headed' fungus, *Opheonectria cocicola* and the 'black fungus.' The first two fungi named are confined to the white fly larvæ; the remaining three are parasitic on the common bark scales of the orange. The brown fungus in its mature stages throws out silvery white hyphæ over the surface of the leaf, and these intertwining with those of the neighboring pustules not infrequently entirely cover the lower surface of the leaf. The snails occasionally feed to a limited extent on these spreading hyphæ, but not so far as observed on the hyphæ of the pustule. Considering the very limited extent to which the snails feed on the hyphæ, it seems probable the spread of the fungus will not be interfered with by the snails. The brown fungus is, as a matter of fact, very prevalent on the trees visited by the snails. The red-pink fungus throws out short hyphæ only; the snails, so far as observed, in no way interfere with this fungus. The red fungus, *Sphærostilbe,* is also apparently untouched, as it is found growing abundantly on the orange trees along with the snails. No opportunity has yet occurred to observe the behavior of the snails towards the gray fungus. The black fungus,[3] however, is found abundantly along with the snails and is apparently untouched by them.

White fly infestation has been severe in the Manatee region for not less than fifteen years, and for an equal or greater time throughout much of the region given by Pilsbry as within the range of *Bulimulus Dormani.* That the snails should be found in orange groves in the Manatee region alone and should have occurred there in sufficient numbers to attract attention or to clean foliage and fruit only within the past three years is suggestive of possible change in food habits of the Manatee River variety of the species, or of an unexplained temporary or permanent reduction of its natural enemies in that locality. During the past winter the snails have been given such protection as they seemed to require, and have been generally distributed throughout some of the large groves in order to further test their usefulness in cleaning up the 'sooty mold' fungus.

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QUOTATIONS.

A NATIONAL DEPARTMENT OF HEALTH.

The government is designed for the welfare of the people, and in a government like ours, of the whole people, one of the first considerations in the people's welfare is their health; material resources are secondary. Without an able-bodied race, no country can prosper, and it is the favoring health conditions of the temperate zones that have made the races inhabiting them the rulers of the world. With the artificial conditions of civilization, however, the problem of the public health comes more and more to the front, and the old *laissez faire* methods show their deficiencies. More than one country at the present time is seeking methods and means to check the degenerative tendencies that threaten them, and the question whether our civilization is to last seems largely to depend on the success of these efforts.

[3] Recently identified as *Myriangium* sp., F. S. Earle, Ann. Rep. Office of Experiment Stations, 1903, pp. 457–8.

The paper of Professor Norton, published in this issue of *The Journal,* puts forth the economic side of the question as fully and fairly as any publication of its compass that has lately appeared. Coming from a non-medical man, it is an encouraging sign. Professor Norton shows how great a waste exists at the present time from preventable deaths, sickness and conditions of physical and mental inefficiency, due largely to the lack of a wise general governmental supervision. We have our pure food laws and our quarantine laws which go a certain way toward checking these evils, but they are, after all, only a beginning of what is needful. We have a great deal of government in regard to health matters, but it is local, unsystematized and often conflicting in different sections of the country and is distributed also, so far as it relates to national affairs, under different departments of the government, thus preventing the best results. The plea for a national department of health could be, to a certain extent, met by the consolidation under a single head of already existing bureaus without a great additional expense, but completeness and full efficiency would demand more than this.

The plan laid out by Professor Norton covers a much broader field, and, while it may not be absolutely realizable at once, the consolidation of the existing bureaus would be a great step in advance and could be enlarged on as wisdom and experience would dictate. The work done on less than a million and a half by the Public Health and Marine-Hospital Service is itself an indication of what a wise expenditure of only a moderate amount of public funds can accomplish. The protection of our southern coast from yellow fever, which it has practically accomplished, is worth annually many times the whole cost of that department, but this is a local service which principally benefits a section and not the whole country. An intelligent direction of health matters, including far more than that bureau at present has under its control, would be of still more widespread and general advantage. A considerable amount of the work done under the Agricultural Department, which is of the utmost value, including, for example, the admirable work of Dr. Wiley and that now assigned it under the pure food law, should properly be consolidated with the sanitary functions of other departments. Then a cabinet officer with expert knowledge of health matters could administer all these and other new departments to much better advantage than under the present system.—*The Journal of the American Medical Society.*

TECHNOLOGY—HARVARD GEOLOGICAL EXPEDITION.

DURING the past summer Professor Douglas Wilson Johnson, of Harvard University and the Massachusetts Institute of Technology, conducted a geological expedition through portions of New Mexico, Arizona and Utah. The expedition was supported by appropriations from both the Institute and Harvard University, together with contributions by several friends of the two institutions. Dr. H. W. Shimer, of the Institute geological department, and Mr. C. H. Decker, a graduate of the Columbia University School of Mines, were members of the party.

The first field work was done in New Mexico, where a week was spent in studying the geological relations of underground waters from the town of Belen eastward, while a week or more was devoted to a trip into the Mount Taylor volcanic district, where a somewhat extended detailed examination of the splendid volcanic necks was made.

The party then proceeded by rail to the Big Bug mining district, twenty-five miles southeast of Prescott, Arizona, where an outfit of wagons, horses and all necessary camp supplies was secured and final preparations made for an overland journey of twelve hundred miles, lasting from June 19 to September 10. Leaving Big Bug and crossing eastward to the Verde River, the ascent from the Basin Region to the Plateau Province was made near the head of Oak Creek, over what is known as the Mogollon Rim. Continuing north past Flagstaff, several days were spent in the San Francisco Mountain region, studying the glacial features in the main peak, and