Mr. J. B. Hatcher, is a small species of *Phororhacos*, or some closely allied genus, in which the sternum is preserved, that this sternum is slightly keeled, and, although no critical comparisons have been made, that the general aspect of the sternum is like that of *Cariama* or *Gypogeranus*. F. A. L.

THE MALARIA EXPEDITION TO WEST AFRICA.

Major Ronald Ross, the lecturer to the Liverpool School of Tropical Diseases, who recently headed the malaria mission to Sierra Leone, delivered an address on December 27th at Liverpool, on the invitation of the African trade section of the Liverpool Chamber of Commerce. His subject was 'The Recent Medical Expedition to West Africa.' According to the London *Times* Major Ross said that politics and science were culminating in two movements of high importance. In politics the Great Powers, tired of self-development, were endeavoring to extend their possessions and civilization all over the world; while in science they had created what was perhaps the most fundamentally important of all knowledge—the experimental science of disease. He believed that in the coming century the success of Imperialism would depend largely upon success with the microscope. Our possessions in Africa were battle grounds between Englishmen and king malaria: they were conquests maintained only at the sacrifice of hecatombs of our countrymen. Malarial fever was perhaps the most important of the diseases of the tropics. For a long time they could obtain no accurate knowledge as to how the disease was produced, but in the last two years they had ascertained definitely at least one mode of infection. They knew for certain that malarial fever was often, perhaps always, caused by the bite of the species of gnat or mosquito called anopheles. The object of the expedition from the Liverpool School of Tropical diseases was to ascertain whether there was any chance of exterminating the anopheles from a given malarious area. It was not the immediate purpose, as some supposed, to banish malaria then and there from the whole continent of Africa. They wished to inquire what could be done in two or three square miles. They selected Free Town, Sierra Leone, for the investigation, and reached there last August. After describing Free town, Major Ross said that the mission set themselves to work at once on the lines of the recent investigations in India and Italy. In a few days they found numbers of the anopheles, and in a few days more they discovered the germs of malaria actually within those insects. They knew then to an absolute certainty that the anopheles of Sierra Leone were responsible at least for a large part of the fever there. The next thing was to ascertain how they bred. Those very dangerous insects bred in small pools or puddles of a certain kind easy to detect when one had once seen them. They made a map of those pools and carefully studied the habits of the insects' larvæ. The conclusion they unanimously came to was that it would probably be an easy and inexpensive matter to rid the town almost entirely of the anopheles either by destroying the larvæ in the puddles or, bettter still, by draining away the puddles altogether.

Comparing the general mode of life of Europeans in Sierra Leone and India, Major Ross said that, though Sierra Leone was scarcely more fatal to Europeans than some parts of India, it was certainly much more unhealthy than the large majority of Indian towns and cantonments were. He confessed that after a service of many years in India and Burma he was much struck with a certain negligence in respect to some matters in Africa. In India Englishmen had learned how best to live in tropical countries. They had certain fixed institutions which they seldom did without. He referred to the commodious bungalow, with its large compound, the punkah, and the mosquito netting on the beds. There was no doubt all those were of great assistance, but in Sierra Leone he was astonished to find none of those things, at least in general use. Instead of there being a separate European quarter on the highest ground available and consisting of well-built houses each in the midst of an open garden, most Europeans in Freetown occupied poor wooden structures quite unfit for English people in that pestiferous climate, crowded together and mingled with the houses of the towns-

people (who had not the same reason to dread the malaria), and in the very lowest, dampest and hottest part of the town. The Governments and the great commercial houses who sent *employés* to the tropics and paid their expenses—especially their funeral expenses, which were considerably larger than the mere cost of the hearse—should have something to say on the matter. The nation had not paid sufficient attention to the shocking mortality in its tropical possessions. They shuddered to hear of a few guinea-pigs being inoculated with disease in the laboratory, but looked on with indifference at the infection by natural means of thousands of their countrymen and of millions of our colored subjects in the tropics. They spent floods of money in the tropics on what was called sanitation and maintaining costly medical service, but such expenditure was more or less perfunctory; it was part of the Budgets, and it was allocated without much intelligence, and he feared, largely wasted. Fifty years ago a new parasite called the ankylostoma duadenale was discovered. It was now known, chiefly as the result of investigation by private persons, to cause an immense amount of sickness and mortality among our colored subjects. Although the presence of the parasite could easily be detected by the microscope, its name hardly found a place in our statistics of disease. A few years ago Giles studied the mode in which it gained an entry into our bodies. Since then no one had repeated his observations or taken the slightest interest in them. It had not been thought worth while to check the ravages of that disease. Again, some years ago a parasite was found which might perhaps cause that terrible and widespread disease, dysentery. No attempt had been made by Englishmen to clear up that important point; and the life-history of the parasite which was studied years ago by Cunningham seemed to have been completely forgotten. Twenty years ago Manson ascertained that the parasite which caused elephantiasis was carried by the mosquito. Until last year not a single person had made any adequate attempt to verify his work—much less to act upon it for the prevention of the disease. In India alone the mortality ascribed to fever was five million persons annually. Besides the mortality vast tracts of fertile possessions were rendered uninhabitable by this disease. Twenty years ago the parasite which caused the disease was found, but not a microscope or pen was used by Englishmen for seven years. During those seven years 35 million persons died from fever in India alone. Then a single Englishman, Vandyke Carter, took up Laveran's discovery. He was now dead. For that and other noble work he received no reward. Not another Englishman moved in the matter for another seven years, lazy, indifferent, and imbecile scepticism holding the ground. Then a few young countrymen of ours commenced to study the subject, years after other great nations had been attacking it with vigor, and now they did find medical men and others who paid some attention to it in the British dominions. Now there was an awakening everywhere. The Royal Society itself, assisted by Mr. Chamberlain and the Colonial Office, had taken up the matter with energy. The tropical schools of London and Liverpool had been founded by leading citizens, and scientific missions were being sent to different parts of the world. He had spoken that day in the hope of increasing sympathy in the great cause. A thousandth part of the energy now spent on numberless philanthropic schemes in Great Britain was likely at that moment to produce a thousand times as much fruit if properly expended in the cause of imperial sanitation. They had much reason to hope that in a year or two they would not only have a complete knowledge of how malaria was produced, but would foresee a cheap and practical mode of prevention.

NAVY REPORT ON WIRELESS TELEGRAPHY.

THE U. S. Navy Board has reported on the Marconi system of wireless telegraphy as follows: It is well adapted for use in squadron signaling under conditions of rain, fog, darkness and motion of speed. Wind, rain, fog, and other conditions of weather do not affect the transmission through space, but dampness may reduce the range, rapidity and accuracy by impairing the insulation of the aërial wire and the instruments. Darkness has no effect.