the middle Atlantic coast, and when 'windrows of dead fish' were reported by numerous vessels at various points between Capes Cod and Hatteras. At this time occurred the extermination of the tile-fish (Lopholatilus chamæleonticeps), discovered by the fish commission in 1879. Tens of thousands of these remarkable fishes, brilliant-hued, and as large as salmon, were reported floating dead at the surface; and diligent explorations made in 1883 and 1884, and during the present season, by the Albatross, show that it, together with many species of invertebrated animals with which it was associated, has entirely disappeared from the grounds where, at the depth of 80 to 150 fathoms, it was formerly very numerous.

Strangely enough no adequate theory has been advanced for the explanation of these phenomena. The 'poisoned water,' as it is called, in which the dead fish are seen, seems to be limited in its areas, and chemical analysis fails to reveal any thing peculiar in its composition. Extreme cold, which in severe winters has produced similar destruction among shore species, like the tautog in New England, can scarcely have been a factor in the 'fish pestilences' in the Gulf. Some of the most careful students of the problem have resorted to the hypothesis of earthquake shocks and the eruption of volcanic gases under the sea. The question deserves careful study at the hands of both physiologist and physicist.

THAT MONTREAL, as the educational centre of Canada, is likely to become more conspicuous in the near future, and that Canadian science is to take a higher position before long, are both indicated by the recent important changes which have occurred at the leading university of the dominion. The medical faculty have just completed additions to their building, which give most important advantages, especially in laboratory work, hitherto beyond the reach of the Canadian student. One of the most important of these changes is the provision of a special pathological laboratory and culture rooms, where investigations concerning the pathogenic importance of bacteria and allied forms will be prosecuted. The work is in charge of Dr. Johnson, a zealous student of pathology, fresh from the laboratory of Koch. In the arts faculty, also, an additional course in vegetable histology, under Prof. Penhallow, has been provided. Altogether, the future promises well for increased activity in biological research in the dominion.

UNDER THE HEADING, 'A boat that hopes to go to Newport and back, at a cost of eighty cents for fuel,' we have recently seen a description of a boat said to be 100 feet long, 12 feet beam, and 75 tons burden, now in process of construction at the ship-yard of Mr. Poillon in New York City. It is presumed that the 'going to Newport and back' means that the craft is to be propelled through the waters of Long Island Sound from New York City to Newport and back again; and when we are told that this is to be accomplished at great speed, and at a cost of only eighty cents in fuel, by employing a method of propulsion which consists in firing blank cartridges from stern-ports under water, the absurdity of the whole thing renders it undeserving of notice. But this, like some other remarkable inventions for saving fuel, seems destined to re-appear at intervals, with the usual result,—somebody made wiser by dearly-bought experience. Not only is the proposed mode of propulsion radically defective, and inefficient in theory, but it has been experimentally demonstrated to be utterly unavailable for any useful purpose whatever in connection with navigation.

TYPHOID FEVER AND ITS PREVALENCE IN AUTUMN.

THE causation of typhoid or enteric fever is involved in great obscurity. Some of the best authorities believe that it may originate *de novo;* in other words, as the great exponent of this theory, Dr. Murchison, states it, "the poison of enteric fever is contained in the emanations from certain forms of putrefying organic matter," and "is often generated by fæcal fermentation." Other authorities, equally good, hold that the appearance of typhoid fever cases necessarily presupposes the existence of a case which stands to the later ones in the relation of cause to effect, and that, if this case is not discovered, it is simply because the evidence is obscure, or the investigator inexperienced. Unfortunately the identification of the typhoid germ has not yet been satisfactorily determined, and until it is we can hardly expect the mystery now surrounding the production of the disease to be cleared away.

In regard to the means by which the fever spreads, there is more unanimity of opinion. The water of wells which has become impure from the leaking of vaults and cesspools has been shown over and over again to have caused typhoid epidemics. Notable instances of this have occurred in our own country, as in Syracuse in 1876, and the more recent epidemic at Plymouth, Penn.

Milk has also many times been the medium through which the typhoid poison has been disseminated. Impure water has been used to wash out the milk-cans, if, indeed, it has not served other purposes, and the milk has thus become infected. A striking example of this medium of contagion was the outbreak of typhoid at Marylebone, London. Within a few weeks 123 families were attacked. Mr. Radcliffe traced the cause of this outbreak to milk, which came from a particular farm on which "water used for dairy purposes contained excremental matters from a patient suffering from enteric fever, immediately before and at the time of the outbreak."

Epidemics occurring at Edinburgh, Glasgow, Bristol, and Dublin have also been traced to milk. These facts should stir up all health officials to the vital importance of the most rigid scrutiny of the milk supplied to the people under their charge, and should lead our judges to inflict the severest penalties upon those detected in the adulteration of this most essential food.

That this disease may be contracted by those who nurse the sick is possible, but if this ever occurs it is extremely rare. The discharges from the intestine are believed to contain the infective material; and in the present state of our knowledge to bury these discharges in the ground, or to cast them into the sewer without previous disinfection, must be looked upon as criminal. It is not difficult to understand that the infective material of such undisinfected discharges may cling to the interior of drain pipes and sewers, and through defective plumbing find admission to the dwelling and sleeping rooms of the well. This is doubtless the explanation of the origin of those cases which are ascribed to sewer-gas.

Typhoid fever is eminently a disease of the autumn, and its greater prevalence at this season of the year is attributed by some to the decay of vegetation; others claim to have found its prevalence to depend upon the rise and fall of the ground water. Just how far these conditions affect the prevalence of the fever is a matter of conjecture, and as they are entirely beyond our control we must in our endeavor towards prevention and restriction pay strict attention to cleanliness in all its forms, and especially to the thorough disinfection of the discharges from patients. For this purpose the committee on disinfectants of the American public health association recommend solutions of chloride of lime, of chlorinated soda, or of bichloride of mercury.

In our cities the typhoid patients are largely recruited from the ranks of those of ample means, who during the summer spend their time in the country, and often at the most fashionable watering places. It is notorious that these resorts are, as a rule, unsanitary in their appointments. The crowding of human beings in such places, with the consequent accumulation of human waste, would, it would seem, help to account for the large representation of typhoid fever victims in the ranks of their patrons. A study of typhoid cases with reference to this point would be interesting and doubtless instructive.

MAN AND THE MASTODON.

THE finding of the tusks, teeth, and portions of the skull of a mastodon last November in Northborough, Worcester county, Mass., has led to the important discovery of a human skull, in close connection with the remains of the mastodon. The facts briefly stated are as follows: Mr. Wm. U. Maynard, while having a ditch dug through a peat bog on his farm in Northborough, near the Shrewsbury line, last November, found portions of the skull and teeth of a mastodon lying on the hard pan under eight feet of peat. The specimens were exhibited to the members of the Worcester society of natural history and Worcester society of antiquity, by Dr. F. W. Brigham, to whom they had been given by Mr. Maynard. The teeth were afterwards taken to Cambridge by Mr. Thomas A. Dickinson, an officer of the Natural history society, and were pronounced by Mr. J. A. Allen, of the Museum of comparative zoölogy, to be those of a mastodon about two-thirds grown. An account of the discovery was written soon after by Mr. Franklin P. Rice of Worcester, and printed by the natural history society. A figure of one of the teeth is given.

Early in the present month, arrangements were made with Mr. Maynard by members of the two societies named, acting under the direction of Dr. W. H. Raymenton, president of the natural history society, to make further excavations in the peat bog for the purpose of finding the rest of the bones of the mastodon. While digging eighteen feet to the southwest from the spot where the mastodon skull was found the preceding season, the workmen exposed the top of a human skull, which was at once taken up by Dr. Raymenton, who was superintending the work; and he states that the skull, which he worked out of the enclosing peaty matrix with his fingers, was resting on its basal portion directly on the blue clay and stones. The under jaw was found, teeth downward, about eight inches to the south of the skull, and in immediate contact with the clay. The evidence of several witnesses is conclusive on these points.

Dr. Raymenton and Mr. Dickinson immediately informed me by letter of the discovery; but, owing