SCIENCE.

FRIDAY, OCTOBER 30, 1885.

COMMENT AND CRITICISM.

THE NEW YORK *Evening post* of Oct. 21 publishes an editorial on the underground wire problem, in which a magnificent solution of the problem of burying the wires is offered. Along Broadway, just outside the curb line of the street, there is to be constructed a capacious underground gallery, wherein all the present impedimenta must be placed, and any obstruction which the workmen may encounter in the building of this gallery is to be removed. Herein are to be placed the steam, gas, sewer, pneumatic, hydraulic, and various other pipes, in addition to the wires of the various electric companies. The other streets of the city are to be tunnelled on a similar though less elaborate plan.

Magnificent as this plan may seem, it is hardly an exaggeration of what the underground commission actually proposes to require. They have caused it to be understood that they will consider no plan of placing the wires underground which does not combine all kinds of wires in a single conduit, with an arrangement by which access to every house may be obtained without excavation of the street. The question that interests the various electrical companies is, "Who is to undertake this extensive piece of engineering, and who is to pay for it?" Certainly, the commission has no power to construct such conduits, and, even if it had, it is difficult to see how the various electrical companies could be compelled to make use of them, or to pay for such use.

That it is not only technically possible, but economically practicable, to put the large mass of city wires underground, was admitted by the electrician of the American Bell telephone company, Dr. W. W. Jacques, in an article published in *Science* of July 3 of the present year, and the Metropolitan telephone company, whose mileage of wire in New York City is greater than that of any other company, has actually asked permission of the commission to put a part of its wires underground, and such permission has been refused. The reason why the wires in New York are not placed underground, and why they are not likely to be placed underground at present, is, not that it is technically impossible, and not that the parties operating them do not desire to place them underground, but because the commission insists upon its being done in accordance with an entirely impracticable plan.

IT WOULD BE INTERESTING to know just what evidence Mr. St. Pierre, the Canadian lawyer, who has recently given a theory of small-pox to the newspapers, has found, which leads him to the conclusion that small-pox is "indigenous to Canada," and "is to Montreal what yellow fever is to New Orleans, or ague to New Jersey." That it is to Montreal what yellow fever is to New Orleans we can well believe, for it is now conceded by the best sanitarians that yellow fever never appears in this country anywhere except when imported from abroad. And unless Mr. St. Pierre can give us something more reliable than Indian tradition, even though it comes from the oldest inhabitant, we shall be inclined to the now well-established opinion that small-pox was brought to this country shortly after its discovery by Columbus.

From the well-known aversion to vaccination which characterizes the French Canadian, we can well believe that small-pox has prevailed there in a more or less epidemic form so long that history fails to tell its first appearance, but we have no doubt that its termination would be very soon recorded if the vaccinators were permitted to have their way.

AGAIN THE PAPERS are flooded with paragraphs concerning great mortality of fishes in the Gulf of Mexico, and such headings as 'Twenty miles of dead fish,' or 'A fish pestilence in the Gulf.' Sensational as such notices at first sight appear, they can scarcely be pronounced to be exaggerations. Records show that as far back as 1844 a widespread destruction of all sorts of salt-water life occurred along our southern coasts; again in 1854, 1878, 1879, and 1880. It was in the winter of 1881–2 that a catastrophe of similar nature took place off

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.