

which were peculiar to their suppers, and inquiry was at once directed to these oysters. It was found that they had been obtained from the deep water of Long Island Sound and had been deposited in the mouth of a fresh water creek to freshen, or to 'fatten,' as it is termed, since under such circumstances the oyster absorbs the fresh water by osmosis and therefore swells and becomes plump. Further inquiry showed that, within about three hundred feet of the place where the oysters had been deposited, was the outlet of a private sewer coming from a house in which were two cases of typhoid fever at the time when the oysters were taken up and sent to the University.

The typhoid bacillus will live for a time in salt or brackish water, and it was proved by trial that if such bacilli are forced in between the two valves of the shell they remained alive long enough to enable the oysters to be carried and used at the fraternity suppers. Whether the bacillus will grow and multiply in living or dead oysters has not yet been determined, but experiments on this point are in progress.

It will be seen that the evidence that the outbreak of typhoid was produced by these oysters is purely circumstantial, but the links in the chain are well connected and strong.

It is by no means certain that there were any typhoid germs within the oysters or the oyster shells when they were sent to Middletown. If the shells were smeared on the outside with typhoid excreta some particles of this might easily have gotten among the oysters during the process of opening them. But it is evident that oysters grown or fattened in positions where sewage may come in contact with them are dangerous if eaten raw.

#### THE EVOLUTION OF INVENTION.

IN a recent study that I have made on the evolution of invention I have divided

the changings which underlie all examples of the process into those—

1. Of the thing or process, commonly called inventions.
2. Of the apparatus and methods used.
3. Of the rewards to the inventor.
4. Of the intellectual activities involved.
5. Of society.

Each one of these has undergone an evolution or elaboration, from monorganism to polyorganism, from simplicity to complexity, from individualism to coöperation, from use to comfort, and so on. This statement needs no extended proof; the roller mill is the descendant of the metals, machinery springs from tools, the device beneficial only to its originator becomes the world-embracing and world-blessing invention; the happy thought of one person at last comes to be the beneficent result of an endowed and perennial coöperation, a perpetual repository of invention renewed constantly by the removal of the senescent and the introduction of new and trained minds as in a university.

Now it requires great patience to get together the material evidence of this unfolding or evolution. The mental processes are no longer in sight. The nearest approach to them are the makeshifts of savages, and their minds are almost a sealed book. It has therefore occurred to the writer that among the questions proposed to those who are collating information relating to the psychic growth of children there should be a short series respecting the unfolding of the inventive faculty or process, the finding out originally how to overcome new difficulties or surmounting old ones in new ways.

O. T. MASON.

#### SCIENTIFIC LITERATURE.

*Popular Lectures and Addresses.*—Vol. II., *Geology and General Physics.*—LORD KELVIN.—Macmillan & Co., New York and London. Pp. 599. Price \$2.00.