

shelf, the underneath shelf space being available for cupboards, which are fitted at the front with sliding doors. Gas taps, and terminal and plug boxes are fixed above the shelf, and balances may be accommodated at suitable intervals along it.

Above the shelf, and mounted rigidly at about six inches from the walls, there are horizontal rigid bars mounted at suitable heights. These are provided with slots and holes so that drawing boards, pulleys, pendulums, etc., may be mounted on bars for experimental work in mechanics.

Two large sinks are fitted in each laboratory and are provided with draining boards, draining pegs, burette and pipette racks, and hot and cold water. The space below the draining boards is made up into racks for drawing boards.

The junior laboratories are each fitted with a demonstration table provided with hot and cold water, gas and electricity (A.C. and D.C. at various voltages).

All lecture rooms and laboratories are fitted with a screen, lantern plugs, dark blinds and demonstration tables. A bell push underneath the demonstration table establishes communication with the preparation room. A service lift works between this preparation room and the one above.

The electrical control room contains a motor-generator set, working off the local A.C. power supply, a bank of large accumulators and a rectifier. Various D.C. voltages (high and low) are distributed to students' benches and demonstration tables from a system of bus bars in the control room. Each circuit is provided with automatic overload trip switches. Each bench and table is also supplied with A.C. at 6 and 12 volts obtained from transformers in each laboratory. A plug is provided on each bench and table for connecting to the A.C. lighting supply. The motor-generator set also provides the current for the sound motion-picture apparatus in the Great Hall of the School.

On the upper chemistry floor there are three laboratories, two large and a smaller one for more advanced work. These correspond in size with those on the ground floor. Each of them possesses large fume cupboards, the draft being produced by electric fans; a generous supply of cupboards with glass doors fitted with an excellent arrangement of adjustable shelving; modern devices for supplying both hot and distilled water, and a battery of hot water ovens. Owing to the more than usually large window space, the laboratories are bright by day, and the electric lighting by night is all that can be desired.

In addition to the three laboratories there are two lecture theatres, both fitted with demonstration benches, shelving, and cupboards for chemicals and apparatus. The larger of these theatres seats 150 people. This room can be darkened very efficiently and quickly; and as it possesses an epidiascope and lantern, it lends itself to purposes other than chemical. Hidden behind a large blackboard, the surface of which, as in the other rooms in this building, is glass, there is a large bench. This room is ventilated by a separate system of fans. Leading to the large lecture theatre is the preparation room. All the benches in the three laboratories are supplied with electricity, in addition to the usual water and gas.

An outside staircase gives access to the upper floor from the outside. The hot water system is provided with a pump to accelerate the circulation. There are two electrically worked clocks, one outside and the other on the inside of the building.

Between the ceiling of the upper floor and the roof of the building, a store room, reached by a ladder, runs the whole length of the building. This plan much relieves the pressure on the smaller store rooms situated on the chemistry and physics floors themselves.

Fishery Research in Newfoundland

THE annual report for 1932 of the Newfoundland Fishery Research Commission (vol. 2, No. 1, 1933) is now published. A large part is concerned with technical investigations, but in addition there are the results of the hydrographical and biological work, including important researches on fishes and plankton. Much has been done to advance the dried-cod industry and work on the artificial drying of cod and squid and on fish meal production has progressed. The cod liver oil investigations, however, are perhaps the most interesting and it is shown that the younger the fish the less colour there is in the oil, the liver from the young fishes giving an almost colourless oil, that from the old fishes being a deep red or yellow. The depth of colour seems to go with the abundance of vitamin A, so the richly pigmented dark oil is the strongest in vitamin content (see also NATURE of July 1, p. 26).

Considerable progress has been made in correlating the movements of cod and salmon with changing conditions of temperature. The year 1932 was superior for the fisheries to 1931, owing to the greater influx of arctic waters in the Newfoundland area, with simultaneously a stronger and opposite influx of saltier water from the Atlantic occurring in the deeper water layer over the Banks. These two

strong inflows of water of opposite types, in opposite directions, led to the production of a large body of mixed water (Bank Water) suitable for the multiplication of marine forms of life, so that the season on the Banks and on the coasts sharing Bank conditions was a good one for the fishery. The plankton investigations clearly show much richer hauls in 1932 than in 1931, the general average ratio being 2:1 in favour of 1932.

Special groups were worked up in detail, notably the Copelata (*Oikopleura* and *Fritillaria*), and maps of the distribution made. This group shows a preponderance of arctic and cold-temperature (arctic and boreo-arctic) forms in 1932 and of boreal (warm-temperate) forms in 1931. There was no evidence that cod-fry and haddock-fry were more plentiful in 1932; rather the reverse was the case. The richness of the plankton in 1932 is correlated with the abundance of squid, *Illex illecebrosa*, inshore which were full of food, whilst in 1931 far more were feeding in the deep waters outside. These squid probably approach the Banks and Newfoundland coast in the deeper water layers along with the influx of comparatively warm saline Atlantic water. Dr. Harold Thompson (director) and his staff are to be congratulated on the amount of good work done in so short a time.