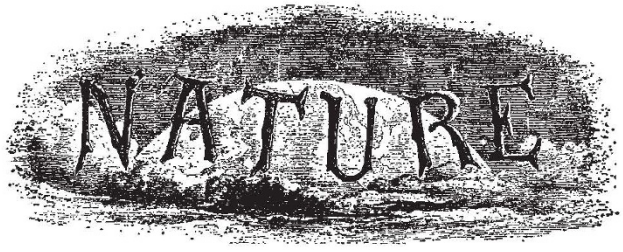
Probably there is more in this than meets the eye. The committee has also responded to the proposed raising of the school-leaving age to 16 by suggesting an introductory two-year course at technical colleges during which young people would prepare, by eighteen or thereabouts, for an examination leading either to a Technical Certificate or a Technician Diploma. From there, the new pattern would suggest, students will go on to read for what are called Higher Technician Certificates and Higher Technical Diplomas. What the Haslegrave Committee has put forward will no doubt work as well as anything else has done in recent years, even if it does seem a needless burden that the two councils responsible for the new system should be financed by means of a tax of student fees and not, as they should have been, by direct payments.

The objection to the board's proposals, unfortunately, is not that it has made a clean sweep of the existing system—that is right and proper—but that it has done so in too narrow a framework. Among educational documents, the Haslegrave Report must surely stand out as the least well grounded in educational principle. The nearest the committee comes to educational insight is the point at which it declares a need for forms of examination which are somehow based on continuous assessment of a student's work—this is at least fashionable. Unhappily, the committee has next to nothing to say about the curricula which would be needed under the new arrangements, and there is no particular reason why the councils that will be over-seeing the new arrangements should spend time and money on the deliberate curriculum development which has been found necessary both in schools and universities.

The committee has also neglected the way in which the coming of the industrial training boards has complicated the training of technicians. For one thing, the new schemes have divided the allegiance of students between the boards and the technical colleges, even though the two kinds of training are supposed to be carefully dovetailed. For another, the industrial training boards have often pinned their faith to training schemes which are educationally dubious, to say the best of them. In these circumstances, it would have been helpful if a committee which seems to pride itself on daring had chosen to speak out on what the training boards are up to. It could also usefully have asked for a simpler policy on the polytechnics, on which the British Government has pinned more of its reputation than is wise.

100 Years Ago



One example, taken at random, will be sufficient to indicate the author's method of procedure. A comparative study of the localities, where fiords occur, shows—(1) that they are mostly to be found on west coasts, and appear generally associated, rarely single; (2) that they are limited to high latitudes, and excluded from the region confined on both sides of the equator by the isothermal line of 10° C.; (3) that they are all within the region of rainfall during the whole of the year. Hence the general law is deduced, that fiords owe their origin principally to certain climatic conditions, viz. a low temperature, a maximum amount of aqueous deposition, and protection from the drying influence of easterly winds.

Now, we can well admit the possibility, or even probability, that continued actual observations may lead to similar conclusions; but in the mean time we are at a loss to understand how rain or isothermal charts, representing most recent conditions, can be applied to explain phenomena which the author himself thinks must have happened so long ago, that the time would have to be reckoned by hundreds of thousands of years.

M. Peschel, as it appears from his own admissions, has never left his study to observe the phenomena on which he reasons. He has collected, extracted, compiled, compared, and—generalised. This is not the legitimate approach to Nature's secrets, and consequently the author's work, although written in a masterly style, leaves us comparatively in the dark. It is the ingenious pleading of a lawyer for the cause he has undertaken, rather than the transparent and triumphant language with which the genuine student of Nature proclaims his discovery to the world.

B. L.

From a review of a German text on geophysics, "Probleme der vergleichenden Erdkunde" by Oscar Peschel, Leipzig 1870. (Nature, 1, 212, *December* 23, 1869.)

SCIENCE TEACHING

Scraping the Bottom

from our Education Correspondent

THE supply of science and mathematics teachers to secondary schools will not be improved until their career structure is altered. This unsurprising conclusion has been reached by a joint working party, chaired by Professor Sir Nevill Mott, of the Royal Society, the Council of Engineering Institutions and the Council of Science and Technology Institutes, after an eighteen-month enquiry. The report (available from the Royal Society) does, nevertheless, bring out some disturbing statistics. The most acute shortage remains in mathematics, where the number of teachers with degrees rose by only 1·1 per cent between 1963 and 1967, compared with an average increase of 3·5 per cent for other subjects.

In other science subjects, the situation is a little better but still serious. For biology, physics and chemistry taken together, the average ratio of teachers to pupils is about one to seventy in comprehensive schools and one to forty in grammar schools. Women teachers with degrees in physics and chemistry are especially scarce; in 1967, for example, there were nearly 5,000 men teachers in these subjects but only just over 1,000 women teachers.

There is little sign of improvement. Between 1963 and 1967, the proportion of science and mathematics graduates entering school teaching or teacher training as their first employment fell from 20·4 per cent to 14·2 per cent, and the number of students entering colleges of education with A level physics or chemistry fell by just over twenty per cent between 1966 and