

## LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

## A Stream of Alluvium.

IN a private letter, Captain Roberts, Medical Officer at Gilgit, sends me the following information, which may interest some of your readers. He says that near Owir, which is near Drasan in the Turikho valley of Chitral, there is a curious object which he describes as a "glacier of alluvium." It fills the bed of a *nullah* which comes down from a ridge of Tirich Mir, and is free of snow. It appears to consist entirely of a moving mass of earth, &c. The top of the *nullah* is at about 12,000 feet and the foot of it at about 5000 feet above sea-level, and it is about five miles long. There is neither ice nor snow above or within this moving mass. It has an undulating, broken surface, and looks like a moraine-covered glacier, except that grass grows upon it in places, and even a few cultivation-terraces have been made upon it by the neighbouring villagers. Its breadth is about 200 yards. There is a stream in a depression on each flank of it, between it and the hillside. The villagers state that it is no new phenomenon. They say that it is always on the move. There are some trees upon it, and by the change in their position, as reported by the natives, it is concluded that the rate of movement is about 200 yards a year. The thing, therefore, is not any sort of mud avalanche. As above stated, parts of the surface are cultivated; but the natives have given up attempting to build houses upon it, because they always tumble down. Captain Roberts is attempting to get a photograph taken of this curious locality.

MARTIN CONWAY.

## Chemists and Chemical Industries.

I SEE with pleasure that the notice of Dr. Fischer's pamphlet on technological education has been written by Prof. Meldola, one of the few men who by experience has a competent knowledge of the real needs of this country.

Dr. Fischer, of course, confines himself to one side of the question, and leaves out of sight the clever finance, the ingenious and somewhat Bismarckian trading methods which have combined with sound technical knowledge to place Germany in a position of superiority.

These equally demand the serious attention of our commercial men.

On the question of education—its character and extent when required to furnish skilled chemical manufacturers—Dr. Fischer has the support of a distinguished master of chemical manufacturing and trading, as practised by German firms, in the person of Dr. Böttinger; and there can be no doubt that the German Government will listen to their advice, and endeavour to provide the education for which they ask.

But while Germany—thus awake to the necessity of maintaining her position—is preparing to act, what are we in this country doing?

Our so-called technical instructors will perhaps pride themselves that their efforts have fluttered the German doves. Nothing can be further from the truth. The real cause is almost entirely a financial alarm, caused by energetic commercial attacks upon the chemical trade now coming from three quarters—England, France, and America. Germany considers that this can best be met by improvement in technical knowledge on the part of the officers of the industrial army.

Meanwhile we are establishing technical schools, institutes, polytechnics, and so on, and teaching smatterings of science to workmen.

What is the result? Our well-equipped technical schools confine themselves to producing not technologists, but teachers.

Germany turns out 95 per cent. technologists, 5 per cent. teachers. Here things are reversed. The reason is plain. Here the persons consulted in such matters have been almost without exception academical chemists, chemical pedagogues. What the manufacturers want has not been asked; the professors know what is good for them, and will provide it. The national attitude so often denounced in the reports of our consuls on the

failures of British traders in foreign markets. The London County Council appoints a technical instruction committee—all educationists; the committee does inquire as to the needs of chemical manufacturers, but selects as typical the trades of sulphuric acid and alkali making, in which the problems have been reduced to almost purely engineering ones, where magnitude of output and vast financial interests have reduced price until the margin for chemical movement has been contracted to almost nil. On the other hand, no representative of the organic chemical manufactures, in which these conditions are absolutely reversed, was deemed worthy of consultation.

And so we go on, and waste our energies on schoolboy work, and our money on polytechnic smattering, and the daily addition to those who must teach because no factory wants them.

Meantime every word that Fischer and Böttinger, Lunge and Meldola urge is true.

A technological faculty is wanted, and could be readily organised. But as long as the teaching of technical chemistry is controlled by those without any factory experience we shall flounder on. Chemical schoolmasters will abound. Our technologists must come from Germany, or go there to be "made," and the advertisement for "a chemist to act under the orders of the engineer of so and so, salary two guineas a week, one month's notice required and given," &c., will be the criterion by which we understand what is the British appreciation of the chemist.

115 Darenth Road, N., February 20. R. J. FRISWELL.

THE perusal of Prof. Meldola's interesting review (NATURE, vol. lix. p. 361) of Fischer's pamphlet on German chemical technology tempts me to recount an experience which befel me a year or so ago, and which in a way accentuates the contrast drawn by Prof. Meldola between chemical trade methods in England and Germany.

Finding that the collection of specimens of raw materials, bye-products and commercial products available for illustrating my lectures on applied chemistry at the institution at which I have the honour to teach was woefully inadequate, I very naturally made attempts to remedy the deficiency.

In the first place, I addressed nearly a hundred letters to various English manufacturing firms, asking for specimens of the kind described. Most of my letters were received with an expressive silence, and some elicited replies in which the writer's indignation at the impudence of my request was expressed with some vigour; in response to about half a dozen of my begging letters, however, I was presented with the desired specimens, and in some of these cases I am bound to say considerable pains had been taken to provide a really instructive series of specimens. For these I am truly grateful, and can respect the spirit in which the specimens were presented; but half a dozen sets of specimens are quite insufficient to illustrate the magnitude and scope of modern chemical technology. It should be remarked that some of the more churlish of my correspondents suggested that if the specimens were needed we should buy them; the well-known liberality of my governing body in educational matters is sufficient guarantee that the articles required would have been purchased long ago if they were on the market.

In my need I therefore addressed a second and similar series of letters, this time to German manufacturing firms; in almost all cases I received a notification that sets of specimens were being prepared. And very shortly I was inundated with packing-cases bearing the stamp "Made in Germany," and filled with comprehensive and admirably designed collections of specimens and patterns illustrating the particular branch of technology concerned. My lecture table is now daily well-stocked with specimens of German manufacture.

The explanation of the difference appears to be that the foreigner was quick to recognise that the young men who are my students to-day will to-morrow be in charge of works using large quantities of chemical products, and was quick to realise that the presence of his specimens on the lecturer's table is a better advertisement than costly notices of his goods in English trade journals; the English manufacturers, with a few noteworthy exceptions, did not accept this view of the matter.

WILLIAM JACKSON POPE.

Department of Chemistry, Goldsmiths' Institute, New Cross.