deavours as something distinct from their own, on a different, if not precisely a lower, plane, or—shall I say?—on a stage such as that on which the dogs danced for Dr. Johnson's admiration. Such misconceptions are good for no one. They ignore two fundamental facts: that science is universal, and that, nevertheless, scientific work may be undertaken on different lines, and even in a somewhat different spirit, under different conditions.

I am convinced that the British Association might do a great deal to dispel the mirage by making a feature of discussions (of course, on quite general lines) on overseas work in different branches. There are always members present at the meetings from many parts of the Empire as well as from various foreign countries, but they are too often silent members from whom expression of opinion is neither encouraged nor invited. In zoology, at any rate, what we want nowadays is not so much isolated fragments of research, however accurate the observation may be, as syntheses of results. Zoology, indeed, and perhaps other branches of biology also, are in danger of destruction by the toxins produced in their own vital processes, such, for example, as nomenclature and purely museum taxonomy. Yet comparatively few of the subjects discussed at meetings of the British Association, to judge from reports, rise much above this level. What is wanted, so far as the scientific man from overseas is concerned, is more informal discussion on fundamental subjects, more expression of reasoned opinion and well-thought-out aims as opposed to details of observation, and less of the specialist atmosphere. At any rate, that is what I want on the rare occasions on which I am able to attend a meeting of the British Association.

N. ANNANDALE.

Indian Museum, Calcutta, October 19.

Chemical Warfare and Scientific Workers.

PROF. SODDY has directed the attention of readers of NATURE (November 4, p. 310) to the issue on the part of the War Office of a letter in which the active co-operation of men of science is invited towards the intensive development of chemical warfare. The list of ordinary associate members embraces more than sixty names of chemists, physicists, and medical men—a list apparently drawn up without consultation with the various members concerned. On receipt of the letter referred to, I replied at once with the request that my name should be removed from the list of associate members, and in this refusal to serve I was actuated by the following considerations:

The use of poisonous gases in warfare was a nefarious novelty introduced by the Germans in violation of the conventions prescribed for civilised belligerents, and the Entente Powers had no option but to undertake methods of retaliation. During the later period of the war I acted as an associate member of the Chemical Warfare Committee, and, like many other chemists, did all in my power to assist by scientific investigation the progress of gas warfare on the offensive side. At that time my services were given most willingly. But the position has entirely altered now that the war is over. My present point of view is that I do not think it right that men of science should, two years after the armistice, be approached with the request to undertake work on a method of conducting warfare which has not yet been recognised as legitimate.

If gas warfare is to be adopted in the future, one result follows of necessity: every nation will be compelled in self-defence to cultivate this form of devilry. Yet we have just listened to the earnest appeal of the Prime Minister for more goodwill amongst nations, amongst people, amongst the classes! The recognition of chemical warfare even on the basis of a peace organisation must certainly engender an atmosphere of suspicion. It will, however, be the hope of many that if nations will by mutual consent unite in the abolition of an instrument which adds so much to the horrors of war, they will also have the strength and the determination to make their decision effective.

The successful development of chemical warfare will obviously be dependent on scientific work, and it is easily understood that the authorities should look to the universities to give them some assistance in its prosecution. University teachers should be on their guard before they bind themselves to a policy in the framing of which their opinion as a body has never been taken. Surely the universities ought to have been asked their views. Why should a professor of chemistry by joining the Chemical Warfare Committee pledge his university to a course of action of which the university may not approve?

ALEX. MCKENZIE.

PROF. SODDY (NATURE, November 4, p. 310) seems to have overlooked some arguments. Lack of preparation for war is no guarantee against an aggressive policy. Recent British history shows a close correlation between Jingoism and military inefficiency. In this country Jingoes are seldom intelligent enough to provide against the risks they incur.

Again, the more scientific war becomes, the more difficult it will be to wage it without the consent of scientific workers. If they really desire a saner state of international relations, scientific workers should seek so to develop the engines of war that they alone can use them.

Lastly, if Prof. Soddy really wishes to stop the application of science to warlike purposes, he should surely welcome with open arms the War Office Committee. Can he suggest any means for discouraging the application of scientific study to war (or to any other problem) so entirely efficient as the placing of the matter in the hands of a large Governmental Committee composed exclusively of eminent persons?

NORMAN R. CAMPBELL.

November 9.

British Laboratory and Scientific Glassware.

PROF. BAYLISS in his letter published in NATURE of November 4 appears to attribute the breakage of British laboratory glassware, when exposed to changes of temperature, to inadequate annealing, citing table glassware as an example of a commercially well-annealed article.

I have at different times examined many hundreds of pieces of table glass under the polariscope, and have never yet found one entirely free from strain. On the other hand, I have often found laboratory beakers, taken at random from average samples, in which no strain whatever can be detected. When strain does occur in beakers and flasks it is generally at the lip, and is caused by the flanging operation. In this connection it is interesting to note that beakers which contain bad striæ, and are, consequently, in a state of strain which cannot be removed by annealing, give figures for thermal endurance as high as those obtained from beakers free from striæ.

The difference in thermal endurance between German and English laboratory glassware is inherent in the composition of the glasses selected for their manufacture. The predominant factor controlling the variations in thermal endurance is the coefficient of expansion of the glass, since this property changes