Letters to the Editor.

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Light Produced by Rubbing Quartz Pebbles Together.

I HOPE that the letter from Lieut.-Comdr. Damant in NATURE of October 21 may induce some chemist to endeavour to ascertain the cause of the peculiar "empyreumatic" odour which accompanies the flashes of light produced by rubbing two quartz pebbles one against the other. My attention was first directed to the fact that the flashing could be obtained, as well when the pebbles are rubbed together submerged in a basin of water as in air, by the Rev. Reginald Gatty.

I have ascertained that careful chemical cleaning of the surface of the pebbles does not prevent the production of the peculiar smell—which might have been due to a deposit of organic matter from the sea—on pebbles picked up on the seashore. I also have ascertained that bits of quartz from inland quarries give out the peculiar smell when they are rubbed together so as to produce flashes of light, and the same smell accompanies the light production when large crystals of rock-crystal are used. Further, I found that the light flashes can be produced when the quartz or crystal is submerged in alcohol. Probably other liquids would not arrest it. Consequently it should be possible to obtain the volatile odoriferous matter in solution when produced and to subject it to chemical examination. It would not be difficult to devise a little mechanism for producing flashes of light by grinding two quartzite pebbles together beneath a small quantity of liquid for some minutes, or even hours, and so to obtain in the liquid such emanations from the triturated quartz as are soluble in suitable liquid reagents. (See pp. 60-61 of my "Divisions of a Naturalist," Methuen, 1915.)

E. RAY LANKESTER.

Chemical Warfare, the Universities, and Scientific Workers.

I HAVE just received an invitation from the War Office "to become an associate member of the Committee now being constituted as part of the new peace organisation for chemical warfare research and experiment." The invitation was accompanied by what is stated to be the present list of associate members, containing more than sixty names well known in science. As it stands, this list is certainly a very powerful inducement to accept the invitation in the case of anyone content in this important matter to follow the lead of his more influential colleagues, for it comprises a very large proportion of the best known workers in the branch of science mainly involved. Unfortunately, however, it includes my own name, and I take it, therefore, that, in part at least, it is in reality a list of those to whom invitations are being issued rather than of those who have accepted the invitation.

The function of the Committee is stated to be "the development to the utmost extent of both the offensive and defensive aspects of chemical warfare." Its work is governed, as regards disclosures, by the terms of the Official Secrets Act, and every member of the Committee will be required to sign a statement that he has read the Act and is prepared to abide by its provisions. It is the intention to allocate, so far as practicable, research of a purely scientific nature in

chemical warfare to universities and similar outside institutions.

Now, for my part, I think this is a very important matter which ought not to be left entirely to the personal choice of individuals, but should be most carefully considered by the universities and by scientific workers as corporate bodies. It was one thing for scientific men and the universities to be called upon in the stress of actual conflict to assist the fighting Services when they were forced by enemy action to protect themselves against, and in turn to develop, a mode of warfare until then proscribed by civilised nations, but it is surely quite another matter for them, in consequence, to be called upon without consultation to become a normal part of the peace organisation for developing it in secret, both in its offensive and defensive aspects, to the utmost possible extent.

I do not think there is any precedent for this departure. Universities train medical men indiscriminately for civil and military services, but the Army Medical Service is non-combatant, and is intended to ameliorate the horrors of war. Universities of late have recognised military subjects in their curricula for their diplomas, and lent their organisations for the purposes of what were in origin defensive military services, such as the Volunteer and Officers Training Corps.

Personally, I feel that universities and scientific men stand for something in the world higher than anything which has as yet found expression and representation in Governments, particularly in their international relations. In consequence, I fear that they will find themselves in a false position if they allow themselves by default to be depressed to the position of mere agents to develop this new and, as yet, still unlegalised mode of warfare. The uses likely to be made of their work are, in the present unsettled condition of the world, highly uncertain, except in so far as it is quite certain that the effective control over these uses is not the part in which they are invited to co-operate. No one can pretend that scientific organisations are strong enough to dictate, as in the case of the professional medical organisation, the purposes for which science shall be used in the community. My own individual view is against accepting this invitation until the question of the position of the universities and scientific men as corporate bodies, in the part of the organisation which they are not invited to join, has first been satisfactorily settled. I think the properly constituted unions of scientific workers should give the matter their consideration and lay down for the guidance of their members the conditions under which they should, if at all, accept the invitation. It would be most helpful to have the views of my colleagues, particularly of some of the sixty-four who are stated already to have joined the organisation as associate members, publicly expressed upon this very important matter.

FREDERICK SODDY.

British Laboratory and Scientific Glassware.

THE British glass industry is undoubtedly to be congratulated on attaining the excellent results described in Mr. Jenkinson's letter in NATURE of October 28, but I may venture to point out that it is little comfort to the user to know that good glass is made if no guidance is given him as to the particular brand referred to. Of the five samples tested it is true that the best was British, but the worst was also British. I gather from inquiries made that the faults complained of by laboratory workers are not so much defective resistance to alkalis, etc., but insufficient