

condition of the blood is produced—a condition known to the profession as acidosis. In the rare cases where acute chlorine poisoning has occurred in chemical works or elsewhere, the symptoms are similar to those produced by the German gases. The severity of the cases depends on three factors: (a) the concentration of the gas (whether encountered undiluted or diluted with air); (b) the duration of exposure; and (c) the efficiency of the respirators and the care with which they have been applied. For general purposes the cases may be divided into three groups: (1) mild cases; (2) moderately severe cases; and (3) very severe cases; and these represent (1) a primary asphyxia, due to lack of oxygen, and partly to spasm of the glottis; (2) asphyxia, due to the outpouring of fluid into the bronchial tubes; and (3) bronchitis and broncho-pneumonia.

The majority of cases that have reached this country have exhibited symptoms of a mild bronchitis, but a certain proportion have been cases of severe bronchitis with broncho-pneumonia, and several have proved fatal.

Mr. Henry Brunner, the well-known chemist, suggests the inhalation of alcohol, by means of a cloth moistened with whisky, brandy, rum, or rectified spirit, as a palliative. It is known that alcohol absorbs chlorine with avidity, and the compounds formed by the inter-action of the two substances are practically harmless. Mr. Brunner's son, also a chemist, who was once accidentally gassed by chlorine, found the inhalation of eau de Cologne extremely soothing. In mild cases, a slight bronchial sedative and plenty of fresh air are all that is required. In the rather more severe type of case, belladonna or atropine has been recommended with the view of diminishing the profuse bronchial secretion, while emetics have also been found useful.

Preventive treatment, however, is by far the most important aspect of the question, and applies with particular force to poisonous gases. Gassing may be prevented in one of two ways: (1) by preventing the access of the gases, *e.g.*, by precluding their entrance into trenches or dwelling-houses; (2) by neutralising the poisonous effects of the gases before they are breathed into the lungs.

The Chief Commissioner of Police has issued a warning that anything which irritates the eyes should be regarded as an indication of the presence of poison gas, and, if caught in the street, the obvious thing to do is to run in the direction from which the wind is coming. It has been found that most of the asphyxiating gases are acid in character, and that, therefore, they can generally be neutralised by the use of

an alkali. Common washing soda is the particular alkali that is found in every house, and a 10 per cent. solution of washing soda, *i.e.*, 1 lb. to a gallon of water, is about the right proportion. It is well, however, to have a simple and handy form of respirator ready for use, and the Commissioner of Police advises that it should be large enough to protect the nose as well as the mouth, with gauze so adjusted as to protect the eyes. The German soldiers have been equipped with respirators containing hyposulphite, which neutralises either chlorine or bromine, and solutions can readily be obtained containing both carbonate and hyposulphite in certain proportions. A portable respirator can be made by saturating it with a strong solution and allowing the respirator to dry. The dried respirator can then be carried in the pocket and damped with ordinary water before use. If kept in a sponge bag, it will keep moist for many days. Various patterns of respirators can be obtained. The War Office design consists of cotton waste soaked in lotion and covered with black gauze netting, which reaches over the whole face so as to cover the eyes. The respirator especially approved by the Institute of Hygiene consists of a combination of cotton wool, flannel, and towelling, with a separate face piece of black netting, which covers the whole of the face, including the respirator. It is simple and effective, but, as many have been examined, and they vary much in utility, it would be well to get advice before relying on some of those now offered.

The lecturer concluded by pointing out that most of the Zeppelin raids have taken place between eleven o'clock at night and two o'clock in the morning, and have always been timed about the new moon. They take place when there is little or no moon in the sky.

## WOUNDS AND BLOOD POISONING.

### NATURE'S ANTIDOTE.

If the world is to benefit to the greatest extent by the knowledge of the profession of medicine, work in the laboratory must go hand in hand with that in the operating room and hospital ward, and this has received striking proof in the work of Sir Almroth Wright in the 13th General Hospital at Boulogne, described by the medical correspondent of the *Times*.

Asepsis, the ideal of all surgeons, is impossible in war, when wounds are frequently infected before they come under the care of the surgeon. Recognizing this, antiseptics have been freely used in the present campaign, but Sir Almroth Wright, one of the most dis-

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