species involved, and how may the disease be eradicated?

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PAPERS "TO BE PUBLISHED"

IT seems to the writer that one of the most annoying things in looking up the literature on a subject is to come across the statement that the particular point one is interested in has been worked out by some previous writer but publication was postponed for some reason. For example, in 1903 this statement appeared: "The embryology of the corn grain was studied and figures were made of the ovule at different stages beginning with the archesporial cell and ending with the fully developed embryo. These drawings and observations not being complete will be reserved for another paper." Two or three workers have recorded the fact that their search for a more recent paper has been in vain, and have remarked on the needlessness of sending them on a wild goose chase.

Another example, published in 1912, is even more serious than the one quoted above. It also concerns maize, and is as follows: "The writer has evidence (not yet published) upon various strains of pod varieties and their hybrids with other podless varieties to show that the pod character, in that form, never was a normal or original pod or glume in *Zea*; and it is also evident that the new branched ear, as it is, is not a reversion to a former one." Here the writer records important conclusions without giving any evidence on which to found them. Of course they carry little weight as they stand, but simply cloud the question at issue. They seem to have been put forth simply to gain priority without the effort being made to substantiate or record the facts back of the conclusions. This seems to be the case, especially when years elapse before the "evidence" is published, as in the case in point.

Undoubtedly many other similar instances could be cited, but these two are sufficient to illustrate what is meant. It is probable that at the time the above were written the authors really expected to follow shortly with second papers, but through some unforeseen circumstances they had to postpone their publication indefinitely. From the viewpoint of the person following up, would it not be better to omit statements as to future efforts and future conclusions and save them for the papers "to be published"? It is probably true that some results worthy of note have come from following up "leads" of this nature, but scientific courtesy forbids the pursuit of such a hint until a more than reasonable time has elapsed after publication, and even then the average person does not care to work on problems where priority claims have been made upon conclusions one may reach.

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QUOTATIONS

MASKS IN GAS WARFARE

THE masks now used are nearly all of the canister type: that is, the inhaled air is drawn in through a canister containing certain materials which will react with, or absorb, the gases before they enter the mask itself. This mask consists of a close-fitting fabric, containing usually more or less rubber in its structure, and held in place by elastic straps over the head. The exhaled breath escapes from the mask through a rubber valve which opens only from pressure from the inside. The time allowed to put on the mask, when slung by a strap from the neck, is under ten seconds. It is carried in a canvas case, and when the forces are within two miles of the front, they are required to wear the outfit in the "alert" position, ready for instant use, night and day.

An important feature which has been the occasion of much scientific study is the eye piece of the masks, to avoid dimming from the moisture accumulating within. Anti-dimming preparations have been found, and lately, as the result of many experiments, materials devised which reduce this difficulty to a minimum, under ordinary conditions of use.

Great improvements have been made in the effectiveness of the absorbent materials used in the canisters, and this, in turn, has increased several fold the general efficiency which it was possible to attain at the time when the manufacture of the masks was first undertaken, and hence to diminish the amount of material to be placed in the canisters. The significance of this will be understood when it is realized that there is a considerable friction to overcome when the inhaled air is drawn through the canister. This was so great in the earlier masks, that it made necessary a suction on the part of the wearer of the mask equal to that required to raise a column of water in a tube to a height of six inches; an effort not incomparable with that made by many asthmatic sufferers to draw air into the lungs. This frictional resistance has been materially lessened by the improvement in the protective materials, and every reduction, however slight, is a great boon to the troops. The materials used in the canisters are selected to react with gases of an acid character, and with those capable of destruction by oxidation, a process like that generally known as combustion. Much reliance is, however, placed upon the absorptive power toward gases exhibited by many porous substances, notably, high grades of charcoal. The principle is the same as that utilized in the "charcoal filters" sometimes attached to our faucets to clarify water supplies.

Of late a new problem has been presented, because of the use of gases in the form of "smoke-clouds," which easily pass through the protective materials contained in the canisters. This has necessitated the addition of another filtering medium, and has necessarily added somewhat to the resistance to be overcome.

How serious this "neutralization" of troops through the continuous wearing of masks may be, is illustrated by the condition which obtained before one of the recent violent attacks on the Western Front. It has been stated that the enemy fired gas-shells (mainly mustard-gas) at the rate of two hundred thousand shells per day for four days, each shell probably averaging about five pounds of material. While the gas-masks will protect the wearer from the inhalation of this gas, they must have required one or more renewals during this period. This attack was followed by a smoke-cloud attack which necessitated the use of the extension filters, thus subjecting the troops to added labor in breathing, after days of constant use of the mask. The physical strain under such conditions can not fail to have been severe. It is not, however, to be supposed that the enemy was allowed to spend his time in full comfort.

As a means of detecting the approach of a toxic gas, canaries and white mice are placed in the trenches, as they are peculiarly sensitive to these chemicals and show signs of distress from dilutions which are unnoticed by man, especially when the gases are nearly odorless.

Of the offensive side of this gas-war it is obvious that little can properly be made public. There is reason to believe that our American chemists are making valuable contributions in this field.—Henry P. Talbot in the *Atlantic Monthly*.

SCIENTIFIC BOOKS

Agricultural Bacteriology. By W. H. Conn. Third edition, revised by Harold Joel Conn. Philadelphia, P. Blakiston's Son & Company. 1918. Pp. x + 357. Illustrated. with 63 figures. $2.00.

The first part of the book is taken up with a discussion of the general characters of microorganisms and their rôle in the decomposition of organic matter. The second part, which occupies practically one fourth of the volume, is devoted to the relations of bacteria to soil fertility. The cycles of carbon and nitrogen are presented. This section includes a chapter on 'The Manure Heap and Sewage" and on one "Bacteria in Water." In the latter the rôle of water in the distribution of disease-producing organisms is discussed. The third part presents the relation of bacteria to milk and to butter and cheese.