advantage of having such books printed in English would be much greater than that of having them printed in German because the number of English speaking people is much greater than the number of those who speak German as a native language. The regions of the world in the control of the English-speaking peoples are very extensive, and well situated to sustain a large population, so that the disparity between the number of English-speaking people and the number of German-speaking people is bound to increase rapidly. With the stimulus that this war has given to scientific and engineering work, with the emphasis that it has laid on the necessity for a country to be thoroughly developed in science and engineering, the chances are that the English-speaking peoples will give greater relative attention in the future than in the past to science and engineering. It may therefore be inferred as probable that the number of English-speaking people using reviews and handbooks will be considerably greater than the number of German-speaking people. Moreover, English is not a difficult language for a foreigner to learn to read.

In an Executive Order issued by President Wilson on May 11, 1918, the National Academy of Sciences was requested to perpetuate the National Research Council, the duties of which should be as follows:

1. In general, to stimulate research in the mathematical, physical and biological sciences, and in the application of these sciences to engineering, agriculture, medicine and other useful arts, with the object of increasing knowledge, of strengthening the national defense, and of contributing in other ways to the public welfare.

2. To survey the larger possibilities of science, to formulate comprehensive projects of research, and to develop effective means of utilizing the scientific and technical resources of the country for dealing with these projects.

3. To promote cooperation in research, at home and abroad, in order to secure concentration of effort, minimize duplication, and stimulate progress; but in all cooperative undertakings to give encouragement to individual initiative, as fundamentally important to the advancement of science.

. . . . . .

6. To gather and collate scientific and technical information at home and abroad, in cooperation with governmental and other agencies and to render such information available to duly accredited persons.

It seems to me as though the National Research Council could not adequately fulfil the duties assigned to it by the President of the United States as enumerated above without undertaking the organization of the publication of yearly reviews of the progress in science and engineering and of occasional compendiums of knowledge already acquired and digested. How otherwise can the council better stimulate research, better afford a survey of the larger possibilities of science, better promote cooperation in research, or more effectively gather and collect scientific and technical information? Moreover, by so doing the council would displace the insidious control of Germany which has been developed into a propaganda not at all flattering to our scientific value, and actually dangerous to the national defense.

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NEMATODES ON MARKETABLE FISHES

THE attention of the writer was called to the problem of attacks of nematodes on marketable fishes while on a visit to Norway during the year 1917. The visit was extended to the northern part of Norway, where the writer came in direct contact with fishermen and had the opportunity to study the problem at close range. The villagers in northern Norway are dependent upon fish to a large extent as a diet. When the writer was there, he frequently heard it remarked when purchase of fish for a meal was to be made: "Don't get one with 'kveisa.' Get fat ones." "Kveisa" is the common name given by the people to round worms found on the liver and stomach in fishes.

Various food fishes common to the coast of Norway, such as *Gadus virens, G. callarias, G. æglefinus, Lycodes esmarckii, Molva vulgaris, M. byrkelange, Brosmius brosme, Hippoglossus vulgaris, Pleuronectes platessa, P. limanda, Sebastes marimus* and others have round worms on the liver; but only those that commonly live near the coast or in shallow water, such as *G. callarias* and *G. virens* seem to be considerably affected.

When many round worms find their way into the muscles of the body of the fishes its health is impaired. The nematode lodges itself between the metameres of the muscles where it becomes encysted. The effect on the fish is marked. Those with a considerable number of intermetamerically encysted worms become sluggish in movements and in time are not able to chase their food. Consequently these fish become an easy prey to their enemy. Examination of several specimens of *G. virens* and *G. callarias,* from various localities, showed that the muscles of apparently healthy specimens were also infected. Fortunately the larger fish on the coast of Norway have not, as a rule, many enemies among themselves; but if the nematode invasion becomes too great they may succumb from lack of ability to catch their own food. This is particularly true of carnivorous species. On the other hand, smaller specimens, if infected, are easily preyed upon. The cause for this disease must be sought in the diet of the fish.

Seventeen years ago, when the writer was a resident of northern Norway, this disease among food fishes was unknown to the consumer of fish. Kveisa were always known to be on the liver, for they could be readily seen; but they were not considered to be of any consequence. If the liver was prepared for table use, which is commonly done when it is obtained absolutely fresh, its capsule and trabeculæ were removed together with the kveisa. But if the consumer at dinner time finds kveisa in a morsal of fish he naturally loses his appetite at once. This in consequence interferes with the use of such kinds of fish as a diet. In fact, newly caught codfish which formerly were one of the most tempting offers to any family table, had little chance in 1917 at the villages of Rörvik i Namdalen, Brönnöy, Sandnessjöen and Stokmarkness. The people knew that the fish were diseased and did not care to buy them.

The fishing industry has been one of the largest industries in Norway for many years. The intestines have not been utilized except by farmers, in northern Norway, who use them as fertilizer. Those people, however, who depend entirely on fishing for their living throw the intestines overboard when the fish is sloughed. It is probable that healthy fish by feeding on infected viscera acquire so many of the parasites that they succumb to their injurious effects.

Along the coast of Norway, the younger generations of shore cods (*Gadus callarias*) and bluefish (*Gadus virens*) commonly seek shallow water for feeding purposes. At fishing villages where a great deal of cleaning of catches takes place the young fish find ample food from discarded intestines, and as all the viscera are as much inffected as is the liver, it may be fair to assume that this material is the cause of the nematode infection.

It is conjectured that when food gets scarce and the vitality of the fish decreases the effect of the nematode inroad is increased. This was indicated by the fact that all of the poorer specimens, of the species *G. callarias* and *G. virens,* which were examined, were much more infected with nematodes than were the healthier ones.

It may be fair to assume that the attack of nematodes on marketable fishes in Norway may become an economic problem of considerable importance. If, however, it is proved that the worms found in the flesh are of the same species as those commonly found on the viscera, the present extensive infection may be remedied by stopping the feeding of young fish on infected viscera. The danger of this infection does not lie in transferring the nematode parasite to man, for that is improbable, but it is unpleasant to eat worms. The problem is, to what extent will the disease diminish the use of nematode infected fish as a diet; and decrease the number of the

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.