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Broadcasting in Great Britain.

THE Postmaster-General has, it is announced, decided temporarily to suspend the issue of licences for the reception of wireless telegraphy and telephony, except to those engaged upon experimental work. In an official statement sent out by the Post Office in relation to the broadcasting situation, it is explained that the Postmaster-General has been prompted to adopt the course he has taken in connexion with the issue of licences for reception purposes owing to the fact that there has been a divergence of views concerning the details with regard to the constitution of the company which it is proposed to form for the purpose of providing the broadcasting services. Not only have the proposed articles of association of the proposed broadcasting company proved unacceptable, as a whole, to the Postmaster-General and his advisers, but also, it would appear, that differences on essential points have also been manifest between the members of the committee dealing with the Postmaster-General in this matter. Considerable progress has, it is stated, now been made towards the solution of the differences between the members of the committee in question, and, at a conference held at the Post Office on September 12, an agreement was reached as to the conditions under which the Postmaster-General will issue the necessary licences for the erection of the broadcasting stations; it therefore now only remains for the Post Office officials and the committee representing the proposed company to settle certain details.

In the official statement in question it is announced that the Postmaster-General and the committee both desire it to be known that membership of the proposed broadcasting company will not, of itself, entitle a member to use the patents of other members in the manufacture of receiving apparatus. The manner in which the broadcasting situation is being handled by the Post Office has, in some quarters, caused considerable disquietude; the policy which is being pursued by the Postmaster-General, whereby an attempt is to be made to control the broadcasting situation by and through the means of the proposed articles of association of the company which it is proposed to license to provide the broadcasting services, certainly seems to be one of doubtful wisdom. As the provisions to be included in the proposed articles of association at the instance or with the approval of the Postmaster-General have not yet been made public, it would be premature further to discuss the matter at the moment.

A point of considerable importance, which requires

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early attention, is the attitude the Post Office is taking in connexion with the issue of licences for experimental work. In the official statement, to which reference has already been made, it is indicated that the Postmaster-General intends in future to issue licences for experimental stations alone to those who can satisfy him that they have a sufficient knowledge of the subject to enable them to make a proper use of such licences. It is surmised in some quarters that this departmental rule has been framed with the view of restricting the grant of licences for experimental work alone to trained scientific workers. In the interests of the progress of science it is essential that the terms and conditions under which it is possible to obtain a licence for experimental work shall not be made so exacting and stringent as to exclude the amateur from the field of wireless research.

The requirements in relation to the issue of licences for experimental stations are definitely laid down in clause 2 of the Wireless Telegraphy Act, 1904 (4 Ed. 7, c. 24), wherein it is provided that "where the applicant for a licence proves to the satisfaction of the Postmaster-General that the sole object of obtaining the licence is to enable him to conduct experiments in wireless telegraphy, a licence for that purpose shall be granted, subject to such special terms, conditions and restrictions as the Postmaster-General may think proper, but shall not be subject to any rent or royalty." The language used in this clause is sufficiently clear to show that it cannot have been the intention of the legislature in any way to penalise the amateur experimentalist in connexion with the procuring of a licence for experimental work. In the matter of the grant of such licences the amateur experimentalist and the trained scientific worker have an equal claim upon the Postmaster-General, provided that they can prove to his satisfaction that the station which they desire to equip is an experimental one, in contradistinction to one fitted up for commercial work. The amateur should receive the fullest encouragement and consideration from the Post Office. Mischief will alone result should the steps which the Postmaster-General and his advisers are contemplating with regard to the issue of licences for experimental work have the unfortunate effect of moving amateurs to evade the official regulations and the provisions of the Wireless Telegraphy Act, 1904.

The Problem of Solution.

THE problem of solution has engaged the attention of many men of science from the time of Newton to the present day, and it cannot be said that a complete

and all-embracing theory has yet been advanced that will interpret all the observed facts. The subject lends itself admirably to those who concern themselves with pointing out weaknesses of accepted conceptions without replacing these ideas by adequate substitutes.

A contributor, writing under the pseudonym Dr. B. Lagueur, in the *Chemical Age* of September 2, very ably and wittily adopts the style of the "Compleat Angler," and produces an imaginary conversation between a "Chymist" (baptised Henry), in whose chemical philosophy there has not arisen the necessity of adopting the ionic hypothesis, and a "Friend," who, being a creation of the author and therefore fundamentally of similar persuasion, is unable to make a satisfactory case for its adoption.

Of the theories advocated it is now generally recognised that the older conception of hydrate formation is insufficient to account for the experimental results obtained. The hydrone theory of Armstrong appears to be that beloved of the "Chymist," and explains solution by assuming the existence of new molecules formed by the union of the water with the solute. It has a certain measure of experimental support, but, despite this, despite the known complexity of water, and despite the crystal work of Bragg, it embodies a number of assumptions difficult to verify, and by itself is scarcely likely to displace the more firmly established hypothesis of Arrhenius, which, though revolutionary, imperfect, and easily attacked, yet fulfils the functions of a hypothesis, and therefore serves a useful purpose.

The ionic hypothesis has explained many facts hitherto extremely puzzling; it has opened out new lines of research, and "as a working hypothesis gives qualitative and quantitative explanation of a large number of chemical phenomena which can otherwise only be accounted for in a vague and unsatisfactory way." The solvate theory—a combination of the original ionic hypothesis with the hydrate and hydrone conceptions—has been the outcome of a long series of experiments on solution by Jones and his collaborators in America. The ionic hypothesis, shorn of the frills and furbelows given to it by enthusiasts, is generally accepted with certain mental reservations as to the existence of ions, except by those who, as Jones says, "oppose it after a careful study of the facts or are unable or indisposed to adapt themselves to new ideas."

Many hypotheses are at best unstable and transient, but before any are discarded they must be killed, and the death of the theory of electrolytic dissociation is not yet, notwithstanding the thrusts given to it in the article in our contemporary.