our forms of speech wherever the present words appear to fail in their purpose.

" -ist " is a concise termination (my only objection to it would be that it contains the unvoiced hiss " s," and the unvoiced explosion " t," which are both inartistic and phonetically ineffective sounds). It is shorter than " -ian " (as in mechanician, etc.), and it already bears a different meaning from " -er " as in runner, singer, etc.

I would therefore plead not only for " scientist " as being a concise and expressive word for one who is skilled in science, but also would go further and suggest the more general use of the termination " -ist " to denote one who is an expert on the theory as well as the practice of the art which he practises.

Thus, we might have *chemicist* (and distinguish him from the " chemist and druggist," and *electrist* to run in parallel with " physicist." If " maths " has come to stay, " mathist " would be an obvious improvement on " mathematician."

There are good reasons why an art, so important to human welfare as language, *should* be rationally developed and improved for human use; it should not be compelled to remain for ever in the neolithic stage.

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December 3.

YOU cannot help it; scientist is an established term, and you can no more suppress it than you can suppress bigamist. But if NATURE maintains its policy on the subject, I am sure we shall not grudge the Editor this little tyranny.

My belief is that objection comes almost entirely from the fact that the word scientist is cacophonous. If the word had been as well lubricated as its near neighbour " sciolist " I am convinced that we should never have heard any serious objection to it, unless perhaps Fate by some caprice had briefed Sir Ray Lankester for the prosecution.

There are already " Rationalists." I was taken to see one not long since, and I should like to be there when Sir Ray Lankester was seeing him. Natural philosophy is still physics in Scotland, and " naturalists " are everywhere students of natural history (sometimes nowadays confused with natural science). A real object of pity is the man who still has to indicate his calling to the public by styling himself

A CHEMIST.

Very Intense Magnetic Fields.

IN previous letters which appeared in the issues of NATURE for April 19 and September 20 respectively, I gave some details of a method for producing very intense magnetic fields.

I now give in Fig. 1 an oscillogram of the condenser current discharge through a solenoid wound with 25 turns per cm. length. The scale of this oscillogram is such that the second peak represents a current of 23,100 amperes in the solenoid winding. It follows, therefore, that the intensity of the magnetic field at the central part of the solenoid core was 730,000 gauss.

Apart from the very high value of the magnetic intensity thus obtained, an examination of the oscillogram of Fig. 1 yields some further very interesting results:

(i.) The frequency of the discharge current as given by the first half-wave of the current is very much higher than that of the rest of the wave. The frequency of the first half-wave about corresponds to the value as calculated from the static constants of the circuit.

(ii.) The current represented by the second peak is greater than that denoted by the first peak.

(iii.) The current values actually obtained are very much greater than those calculated from the constants of the circuit.

A full explanation of these effects is not yet clear. There is one factor, however, which has an important bearing on the phenomena, namely: The intense mechanical force developed between the neighbouring turns of the solenoid causes them to move relatively to each other, and in this way a back e.m.f.

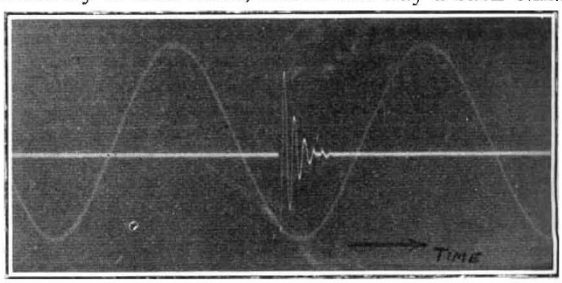

FIG. 1.

is induced in the solenoid winding which is equivalent to a change in the static constants of the circuit. The large wave shown in the oscillogram is a 50 frequency wave.

Magnetic fields of an intensity of 1,400,000 gauss have been obtained already by the method described, and there is definite evidence that the magnetisation curve of steel is changed after having been subjected to these very intense fields.

Further modification of the apparatus is now being effected by means of which it is expected that magnetic fields of an intensity of about 10,000,000 gauss will shortly be available.

T. F. WALL.

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November 29.

Chemical Reactions at High Pressures.

IT is generally recognised that under high pressures many chemical reactions which take place only slowly under ordinary conditions may be greatly accelerated, and new reactions, hitherto considered impossible, may reach a considerable velocity. This opens up a very interesting and important field of study, and there is little doubt that there may result many important industrial developments and even the creation of new industries. Before, however, the chemist can adequately discharge his functions in connexion with this work, it will be necessary for the engineer to provide him with the special tools which will be required in connexion with it. For example, new means will have to be found for the development and control of pressures of a much higher order than has hitherto been used. New methods for the handling of solids, liquids, and gases will have to be devised; heat interchange under new conditions will have to be studied. In fact, the technique of high pressure work generally will have to be developed.

May I suggest that, if Great Britain is to keep abreast of the advances which are being made in this field abroad, it is very necessary that the serious attention of our engineering schools and laboratories should be turned to the need of the chemist in this connexion.

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