

restrial species, the methods of dispersal being different in the two classes of animals.

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**"SAME"—EDUCATIONAL EXPERIMENT  
STATIONS**

TO THE EDITOR OF SCIENCE: I have read with much interest the bill of Senator Newlands for the establishment of engineering experiment stations and heartily approve "same."

It is especially gratifying to note that bulletins giving results of investigations "shall be sent to persons, newspapers, institutions and libraries . . . as may request same" (Sec. 3, SCIENCE, p. 891).

In connection with "same" it is interesting to note that the use of the word "same" without "the" before it, which formerly was considered a sign of illiteracy, has now so far become customary that it may be allowed in a bill introduced in the Senate of the United States, and that both "same" and "as" may be used as relative pronouns.

The bill for the establishment of engineering experiment stations should be passed, after it has been improved by the Senate's grammatical censor. It is to be hoped that some day in the near future another bill will be introduced in the Senate for the establishment of one or more Educational Experiment Stations. The government, through its Agricultural Experiment Stations teaches the farmer how to raise crops; through its Bureau of Mines it teaches the mine owners how to mine coal and to avoid wastes of property and of life; should it not have Educational Experiment Stations to teach our schools and colleges how to avoid educational wastes?

WM. KENT

**SCIENCE AND WAR**

TO THE EDITOR OF SCIENCE: The Boston Sunday *Herald* prints a feature called "Herbert Kaufman's Weekly Page." It must be popular, though the writer has never heard it quoted—in contrast to this paper's apotheosis of American wit, the "Line o' type." The page is a collection of moral sentiments in a form to which no one can deny a frequent force and picturesqueness. Its dominant appeal is emo-

tional. A few issues since it contained an appreciation of science running in part as follows:

For half a century we have liberally endowed, supported and encouraged the scientists. Community funds paid for the institutions in which they were educated and underwrote their experiments.

And all the while, we believed that these endeavors were promotions in the interest of civilization. . . .

To-day we stand horror-stricken before the evidence of inhumanities only made possible through scientific advancement. . . .

Chemistry, you stand indicted and shamed before the Bar of History! . . .

You have prostituted your genius to fell and ogriish devices. . . .

You have turned killer and run with the wolf-pack.

But we will reckon with you in the end.

We can probably agree with Mr. Kaufman that science has increased the amount of suffering that war inflicts. No account need be taken here of the questions if this is due to science or human nature, and if the compensations are not sufficient; the second because it admits an endless argument, and the first, of none. The issue boils down to whether, if the encouragement of science on the broad lines of the past were abandoned, the horrors of war would be proportionately lessened.

This would be conceivably so if it were humanly possible to restrict scientific work to lines of no value for warfare. But success in war is as keenly desired as ever, and it is the part now of every prudent nation to equip itself in the best practicable manner for carrying it on. The writer has elsewhere remarked on the commonplace that victory is not to the side that can exert the strongest physical force with its own bodies but which can most intelligently direct the forces of nature. If the total amount of scientific work were thus restricted the human result would be to concentrate the work of science more and more upon warlike matters with a consequently increased social suggestion of war. A liberal encouragement of scientific progress serves to diffuse men's energies over other and more peaceful interests. To blame chemistry for the horrors of