and the brighter "pointers" of the dipper. The groups did not flash simultaneously with each other, but their rate, like that of the independent individuals, was very uniform—20 or 21 flashes to the minute. The groups would remain clearly defined for two or three minutes, each one drifting slowly and horizontally in its own direction at a height varying from 10 to 25 feet above the ground. They would then disintegrate, their members gradually "falling out of step" with each other. Not all the fireflies of this species in sight flashed with the groups—some were always showing their lights independently—but the great majority of those in a given area would temporarily band together.

At Pepper, in the Santa Cruz Valley, St. Elizabeth, on the evening of March 21, 1931, I saw two individuals, apparently of this same species, flying straight ahead across a common at a distance of about 20 feet from each other and 6 feet above the ground. While I watched them they flashed in perfect unison 14 times at intervals of about 3 seconds. They then disappeared behind some shrubbery. I did not measure the distance traversed in this way, but according to my recollection it could not have been much less than 100 yards.

Though I have no suggestion to offer regarding the cause of either of these types of simultaneous flashing I can not believe that they are to be explained as responses to females in the grass. Superficially, at least, they present an analogy with the simultaneous movements of birds in a flock or of fishes in a school.

GERRIT S. MILLER, JR.

U. S. NATIONAL MUSEUM

SCIENTIFIC MEN AND THE NEWSPAPERS

MORE important than any of the achievements of science are the philosophical implications of its discoveries—the need for leadership in thinking, leadership in the social and economic applications of the discoveries. In this leadership scientists are not prominent. Their failure to guide the public in adjusting the problems of plenty which the scientists have created may account largely for our economic and social crisis. This failure is due largely to the fact that the scientists have been keeping out of the newspapers, out of the place where the public can get acquainted with them, out of the place where the masses make up their minds what kind of leadership to follow.

The failure is mostly due to a mechanical maladjustment, to the fact that the scientists do not speak the language of the newspapers, that is, of the national forum. That language requires emotional appeal. For we are interested mostly only in those things which stir our emotions. We are likely to act only when our emotions are aroused.

The leaders of national thought take this emotional factor into account. If scientists did likewise, the public would listen to their message. It is because they have not done so that we see such an amazing situation as the attempts to solve unemployment without applying the first principle of science, which is to measure the precise dimensions of a problem. Because this principle is not understood, no one has taken an exact census of the unemployed.

The same lack is apparent in proposals to establish social security, such as old age pensions and unemployment insurance. The lack rises from the fact that the people as a whole have no adequate realization of the nature of the scientific approach.

They lack this realization because the scientists have not been telling in the newspapers the story of the frequently dramatic results of using the seemingly prosaic scientific approach. Much can be said on both sides as to why the scientists have kept out of newspapers. But I do not think there is any question about the harm done by the long years of scientific aloofness.

Honesty is the great need in guiding a baffled nation. I know of no place where all the principles of honesty, intellectual and moral, are so rigidly and openly spread as in the publications which scientists write for each other. These models the public almost never sees. The scientific riddles which are solved through this kind of honesty the public hears of only infrequently. Unless the public is to remain ignorant, and do so to its great harm, the place to tell about these scientific achievements and their implications is in the daily newspapers.

HOWARD W. BLAKESLEE,
Science Editor

THE ASSOCIATED PRESS
NEW YORK

BIOLOGICAL ABSTRACTS

WE believe that there are many zoologists who, like the writer, unconnected with *Biological Abstracts,* have heard with dismay of the reported decision of the Rockefeller Foundation to discontinue its support of that journal. Through a period of more than eight years we have become accustomed not only to lean heavily upon the *Abstracts* for information in our own fields of research, but also to use it for the revision and strengthening of our lecture notes in fields more remote. In the preparation of the latter we have become acquainted with many books and articles of which we would otherwise have remained totally ignorant. The titles of many biological publications are woefully inadequate in giving a true idea of their contents, and he who depends upon titles misses many sources of pertinent knowledge. The reading of the