the reactions of animals in general may be classed under three heads: (1) species showing alarm; (2) species showing indifference, and (3) species which react with defiance. While at this stage only preliminary results can be given, it seems that within any one species individual animals will react differently each to the other. Thus, among mammals at least, there is considerable evidence to support the claims of those naturalists who regard animals as capable of having definite and distinctive "personalities."

Huxley[1] has recently given some account of the behavior of the animals of London Zoo during air bombardment. Fell[2] has given similar information in regard to wild animals of the east coast of Scotland. News reports have supplied additional information from time to time.[3]

During recent air-raids on London, a young giraffe deserted its house to sleep in the open (thereby catching a chill). One zebra preferred to take shelter in a basement, while another which had been liberated by a bomb blowing down the gate of its enclosure, emerged to wander through Regent's Park. The monkeys were indifferent. Some ruminants ran about. A crane which was also released went out to the London streets. A donkey reacted defiantly and replied to the noises of the bombs by an angry braying of its own.

During a recent air-raid on the east coast of Scotland a flock of black-headed gulls (*Larus ridibundus*) displayed something akin to mass hysteria when a nearby anti-aircraft battery suddenly opened fire in the early hours of the morning. With one accord the whole colony of several hundred rose into the air in a flurry of startled cries and flapping wings. For nearly an hour afterwards they circled round and round before once more resuming their habitual position on the field that they have made their winter quarters. The smaller wild birds contented themselves in uttering subdued twitterings from their perches in the trees and hedgerows. On the other hand, an owl which has taken up residence in the locality behaved in a manner more akin to the attitude of defiance shown by the London donkey. This bird, probably a tawny owl (*Strix a. sylvatica*) gave vent to its feelings during some unusually intense gunfire by a paroxysm of indignant screeches of a most belligerent tenor. He left no doubt that he resented this unseemly incursion upon the progress of his night-work.

There have been several cases reported of dogs becoming conditioned to respond appropriately to the "Alert" and "Raiders Past" signals. Thus, when the warning sirens go one dog "began to howl and put its tail between its legs," while another went straight to the shelter. On the "Raiders Past" signal, these dogs emerged at once from the place of refuge.[3] Mice are generally regarded as being extremely sensitive to loud noises. However, during one raid, the writer had occasion to enter another room in the house, thereby startling a mouse which had been foraging, unperturbed by the "noises off." Perhaps mice, as well as men, become accustomed to the amenities of twentieth-century civilization.

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[1] *The Spectator*, London, November 1, 1940.
[2] *The Spectator*, London, November 8, 1940.
[3] *The Manchester Guardian*, and other sources.

SOCIETIES AND MEETINGS

THE WESTERN SOCIETY OF NATURALISTS

The thirteenth annual winter meeting of the Western Society of Naturalists was held at the University of California at Los Angeles on December 18, 19 and 20, 1940. Nearly 100 members and guests registered. Prominent on the program were two evening lectures and three symposia. On December 18, Professor H. S. Jennings addressed an informal evening gathering and smoker on the subject, "The Biological Nature of Man." On December 19, following the annual dinner, Professor G. E. MacGinitie, retiring president of the society, delivered an address, illustrated by both slides and motion pictures, on the feeding habits of some mud-flat animals. The symposia were as follows:

December 18 (morning): "Training for Research and Instruction in the Biological Sciences." *Chairman:* President G. E. MacGinitie. *Contributors:* Dr. I. L. Wiggins, Department of Botany, Stanford University; Dr. Vesta Holt, Department of Biology, Chico State Teachers College; Dr. Raymond B. Cowles, Department of Zoology, University of California at Los Angeles; Dr. Jesse A. Bond, Department of Education, University of California at Los Angeles.

December 18 (afternoon): "The Historical Development of the Climax Communities of the Western United States." *Chairman:* Professor Carl Epling, Department of Botany, University of California at Los Angeles. *Contributors:* A. E. Wieslander, U. S. Forestry Service; H. L. Mason, University of California; D. I. Axelrod, fellow, National Research Council, and I. L. Wiggins, Stanford University.

December 19 (morning): "Perspectives in Marine Biology." *Chairman:* Dr. Robert C. Miller, director, California Academy of Sciences. *Contributors:* Dr. Rolf L. Bolin, Hopkins Marine Station, Pacific Grove; Dr. Robert C. Miller; Dr. C. E. ZoBell, Scripps Institution of Oceanography; Dr. E. R. Norris, University of Washington; Dr. H. U. Sverdrup, director, Scripps Institution of Oceanography.

Officers for the year 1941 were elected as follows:

President, Dr. Gordon H. Ball, University of California at Los Angeles.
Vice-president, Dr. Herbert W. Graham, Mills College.
Secretary-Treasurer, Dr. Denis L. Fox, Scripps Institution of Oceanography.
Members of the Executive Committee: Dr. Ira L. Wiggins, Stanford University; Dr. H. L. Mason, University of California.

D. L. Fox,
Secretary

REPORTS

REPORT TO CONGRESS OF THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

"SCIENTIFIC research is the most fundamental activity of the Government in connection with the development of America's potential strength in the air," Congress was told on January 13 in the report of the National Advisory Committee for Aeronautics, transmitted by President Roosevelt. It was submitted to him by Dr. Vannevar Bush, president of the Carnegie Institution of Washington, chairman of the committee.

This quotation from the report and the following further quotations have been selected and sent to SCIENCE by Science Service, Washington, D. C.

"No matter how greatly production facilities may be increased, no matter how many pilots may be trained, unless the aircraft that are built for action are at least equal in performance to those of any possible enemy, the whole effort will be largely wasted," the report continues.

Importance of such research has been recognized, for, it is stated:

"The Army and Navy have maintained the closest contact with the committee's laboratories and have taken the fullest advantage of the committee's facilities in the solution of their pressing problems. The Army Air Corps has appointed at the committee's laboratory at Langley Field a liaison officer, and the Navy's liaison officer, having headquarters in Washington, visits Langley Field at regular and frequent intervals.

"The committee has two major research laboratories, one at Langley Field, Va., known as the Langley Memorial Aeronautical Laboratory, and the others at Moffett Field, Calif., known as the Ames Aeronautical Laboratory. The flight research laboratory was the first unit of the Ames Laboratory to get into operation. Other units will be placed in operation as rapidly as their construction is completed.

"Both the Langley Memorial Aeronautical Laboratory and the Ames Aeronautical Laboratory are devoted chiefly to aerodynamics, although the committee has at Langley Field a structures research laboratory, a hydrodynamics research laboratory and a small engine research laboratory. To remedy the deficiency in engine research facilities the Congress by act approved June 26, 1940, authorized the construction of a third major research station for the committee which is to be an aircraft-engine-research laboratory. The site finally selected by the committee under authority of that act is adjoining the municipal airport at Cleveland, Ohio, and the committee is proceeding with its construction. The details of this action are set forth in Part II of this report.

"The committee highly appreciates the support of the President and the Congress in providing these two additional research stations during the past two years. They were indispensable to strengthen research and to accelerate aeronautical progress in the United States. They will prove of great value to the national defense, and it is confidently predicted that their economic value to the nation will more than offset their cost."

Many of the researches are necessarily secret, for, the report states:

"The committee has found it necessary in the national interests to withhold from public distribution the detailed results of its researches. Therefore, until world conditions change, this and succeeding Annual Reports will deal only in general terms with the results accomplished."

Higher speed planes, with greatly increased armor and armament, are viewed as the outstanding trend produced by the European war. Special studies to meet the requirements are being made.

"The demand for increased speed has resulted in the need for much greater horsepower," the report continues. "Whereas pursuit airplanes of a year ago were equipped with engines of 1,000 horsepower, they are now being designed with single engines of 2,000 horsepower. The trends toward increased speed and higher ceiling, toward larger and heavier engines, toward increased armor and armament, necessitate larger and much heavier types of airplanes. This condition has established a definite trend toward higher wing loadings.

"Because of the higher flying speeds demanded by the Army and Navy, the committee has given special study to the important subject of compressibility shock encountered at high speeds. With the speeds now attainable, it is essential that care be taken to design all parts of the airplane structure so as to prevent velocities approaching the speed of sound from occurring at any point. The 500-mile-per-hour wind tunnel at the Committee's Langley Field laboratory has proved of great value in the study of this problem."