

pertinent to field feeding conditions. For example, during a pasture trial by Southcott, Roe and Turner<sup>30</sup>, groups of two, four, eight and sixteen sheep were placed in adjacent sections of a divided area. Whereas the others grazed over the whole of the allotted area, the group of two remained close to the fence within easy sight of their nearest fellows, neglected the periphery and, over a period of time, lost weight. If two groups of two sheep were put in adjacent sections, they grazed up and down the fence together and produced a distinct path. The experiments suggested that four sheep constituted a quorum. Turner<sup>31</sup>, in the course of examining the cause of death after wheat feeding of drought-stricken sheep, found that, while he could reproduce the phenomenon on a field station, he could not do so in the laboratory with comparably starved sheep in separate pens. They would not eat enough wheat. Trotter<sup>32</sup> in his book on "The Instincts of the Herd in Peace and War" points out the advantages of the gregarious habit in pursuit, or sensitivity to alarms. In sheep, the latter would be relevant to the time an individual animal might spend grazing, being to some extent dependent on other sentinel sheep to signal danger, and being reinforced in its feeding by the sound and sight of other sheep similarly engaged. Field observers report that sheep commonly graze as a flock towards the direction of the wind. Trotter proposed "that each separate member of a gregarious species inherits characters deeply rooted in his being which effectually differentiate him from any non-gregarious animal" and "they will ensure his responding in a specialized way which will be quite different from the response of a solitary animal". He held that a simple example, observed by all, was the leisurely feeding of the cat as compared with the voracious eating of the dog which, to use a slang term with a sound biological basis, 'wolves' its food.

Contrary to the view of Fayziev and Uzhdavini<sup>28</sup> cited above, it would seem that whether the secretion increases (Fig. 4) or decreases (Fig. 5) is in some way related to the cortical and affective reaction to the information of the distance receptors. It seems unlikely that such visceral responses would be absent in the field. Interpretation is sometimes complicated by the fact that secretion may vary as a result of interoceptor stimuli (for example, onset of rumination, Fig. 4). From the point of view of method, there is the possibility of integration of Pavlovian techniques with the approach of Lorenz<sup>1</sup> and Tinbergen<sup>3</sup> to the study of innate behaviour, in so far as effective devices fitted to Wright fistulae and carotid loops will permit measurement of visceral responses to social situations in the field. For that matter, however, study while the animal is in close accosted proximity to man may be very profitable in revealing behaviour patterns, as amply illustrated by the writings of Lorenz<sup>33</sup>. The parotid fistula in the sheep also has the added advantage that the animal's behaviour may be observed at times when a precisely defined distortion of body chemistry exists<sup>34</sup>. For example, we have observed a group of sheep, each known to be depleted of 500-700 m.equiv. of sodium ions, butt and fight one another for access to a block of rock salt placed in their enclosure.

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## OBITUARIES

### Vice-Admiral John Dodd Nares

THE announcement of the death on January 18 of Vice-Admiral J. D. Nares was received with deep regret by all who knew him; the younger son of Admiral Sir George Nares, he, like his father and elder brother George, chose the Navy as his career and joined the training ship *Britannia* as a naval cadet. In 1898, being by that time a sub-lieutenant, he was appointed to the *Triton*, and there commenced his association with the surveying branch of the Navy in which he continued to serve during the whole of his time on the active list.

After a brief period in home waters, Nares was appointed to the *Penguin* and for the next eight years remained on the Australian Station, assisting in surveys of New Zealand, Queensland and Tasmania. Returning to England in 1907, Nares next went to the *Research* for a season, and a year later joined the *Egeria* in British Columbia. In 1910 he

succeeded to the command, and on the final paying off of the *Egeria* was appointed to command the *Fantome* for surveys in the Buccaneer Archipelago on the west coast of Australia.

Promoted to commander in 1913, Nares served in the Hydrographic Department of the Admiralty until 1917, when he took command of the *Enterprise* and distinguished himself during naval operations on the coast of Palestine, for which service he was awarded the D.S.O.

In 1919 Nares was promoted to captain and, after a period of service in the Mediterranean and Red Sea in the *Enterprise* and the *Merlin*, returned to the Admiralty as superintendent of charts. In 1923 he was surveying the West African coast in the *Endeavour* and in 1925 became assistant hydrographer of the Navy until 1928, when he took over the *Iroquois*, surveying the Straits of Malacca. His final active service was once again as assistant hydrographer, and on promotion to rear-admiral he was placed on the retired list.

During 1931-32 Nares executed surveys of Bharanagar Channel on the west coast of India.

In 1932 Admiral Nares was elected president of the Directing Committee of the International Hydrographic Bureau at Monaco, and re-elected in 1937 and 1947, and was a director until his death. At the request of the Admiralty, he remained at his post in Monaco until France was overrun by the Germans, and he then rejoined his old department at the Admiralty, serving as assistant hydrographer and in the rank of captain.

During his twenty-five years association with the International Hydrographic Bureau, Nares and his co-directors maintained the high prestige of the Bureau, and the technical and scientific publications produced continue to be of great benefit to navigators, hydrographers, oceanographers and geodesists of all nations. Nares himself took every opportunity to attend international conferences all over Europe, and his great willingness to help was also thoroughly appreciated by his colleagues and those who sought his assistance and advice. Although he would have been the first to disclaim any title to brilliance, Nares's work in the hydrographic field was of sterling

worth and always dependable. His kindly disposition and ability to mix with the people of other nations endeared him to all who came in contact with him. He was never guilty of a mean action and was, in fact, an example of what an English gentleman should always strive to be.

Nares married Adeline Chaffey, daughter of the Hon. Mr. Justice McIntyre, of Hobart, Tasmania, who survives him together with a daughter. His only son, Alastair, was killed in action while serving in the Fleet Air Arm. J. A. EDGELL

#### Mrs. Watson Davis

MRS. HELEN MILES DAVIS, editor of *Chemistry* and wife of Watson Davis, director of Science Service and editor of the *Science News Letter*, died on January 25, at the age of sixty-one.

Born in Washington, D.C., on April 13, 1895, Mrs. Davis graduated from George Washington University College of Engineering with a B.S. in chemistry degree in 1918. She specialized in the popularization of science, especially chemistry, and the history of science. Since 1944 she had edited *Chemistry*, a magazine which is used especially in high schools. The following books were written or edited by her: "The Chemical Elements", "Scientific Instruments You Can Make", "Atomic Facts", "Science Exhibits", "Chemistry Show Book", "Exhibit Techniques". Her compilation of "New Laws of Matter" has run through five editions since its compilation just after the announcement of the first use of the atom bomb.

As chemistry writer for Science Service, she reported the Geneva Conference on the Peaceful Uses of Atomic Energy (1955), an atom bomb test, and numerous meetings of the American Chemical Society and other scientific societies. She often travelled with her husband when he was attending scientific gatherings outside the United States, and had accompanied him several times when he visited Britain.

She was a member of the American Chemical Society, Chemical Society of Washington, the Congressional Press Gallery, Sigma Kappa Sorority and the Eistophos Club.

## NEWS and VIEWS

### Atomic Energy for Peaceful Purposes:

#### Liaison between London, Paris and New York

SPECIAL offices to facilitate the exchange of information between British and American atomic scientists have been set up in London and Paris by the U.S. Atomic Energy Commission. The offices are concerned exclusively with the applications of atomic energy for peaceful purposes and in particular with helping to implement the bilateral agreements the United States has made with other Governments. The scientists allotted to them will visit British and French atomic energy establishments respectively, reporting developments of interest to the United States. They will also be available to industrial firms, the public and Press for consultation on 'atoms for peace' problems. Dr. Edward L. Brady, a thirty-seven year old atomic scientist previously with the General Electric Company at the Knolls Atomic Power laboratory at Schenectady, N.Y., has taken up his duties as liaison officer in London.

He worked on the war-time atom bomb project in the Metallurgical Laboratory and Oak Ridge National Laboratory and has specialized in corrosion studies, fuel element stability and the chemistry of reactor coolants. Dr. Brady is being assisted by Mr. William A. Burke of the U.S. State Department. Mr. Burke was formerly at the Berkeley Radiation Laboratory and Washington Headquarters. The liaison office is at the United States Embassy in London. Dr. Amasa S. Bishop, formerly of the Commission's Research Division, has been appointed to the Paris post. He has been in charge of the American programme for controlling thermonuclear energy for power purposes and is also a specialist in meson physics.

### Exchange of Information on Controlled Thermonuclear Reactions

UNDER the agreement for co-operation in the civil uses of atomic energy between the Governments of the United Kingdom and the United States, an