

Fog Fever Syndrome in Parasitic Bronchitis

Two years ago, Hudson, working at this laboratory, described a syndrome that he had observed in adult cattle, of which pulmonary oedema was a feature. He suggested that it might be due to an allergy associated with the small number of lungworms that he noticed were present.

Field studies have shown pulmonary oedema and emphysema to be a common feature of parasitic bronchitis in the adult bovine. The helminthological picture in such cases is very variable. At one extreme there may be large numbers of mature worms present, while at the other only a score or so of microscopic worms may be recovered. Since the development of the worms in the resistant host is often inhibited, their size gives but little indication of the time at which they were picked up.

Clinically, outbreaks of husk in adult cattle make themselves manifest either by a qualitatively uncharacteristic cough, or else, where pulmonary oedema or emphysema or both are present, by a syndrome very closely resembling the condition known as 'fog fever'. This is characterized by dyspnoea and crepitant or squeaking rales. The animal stands with its head stretched out, mouth open and tongue protruded, the ribs are held out and breathing is shallow, rapid and abdominal. The temperature is sometimes high, sometimes normal and may even be subnormal. Generally there is a loud expiratory grunt or groan. Coughing is relatively infrequent.

The occurrence of this syndrome is not confined to adults, and we have observed it in calves after three weeks of exposure to exceptionally heavy natural infection with *Dictyocaulus viviparus*.

We have also been having considerable success in producing the syndrome by the artificial administration of the infective larvæ of *D. viviparus* to young cattle kept under worm-free conditions. We are not able to produce the condition in every animal at will; nor is every case as spectacular as the most acute cases encountered in the field; nor yet is the proportion of deaths any higher than it is in naturally occurring outbreaks. In the twenty-four animals of the present series that have survived the first two months of the initial infection, the syndrome has been observed twelve times. There have been three deaths.

The syndrome, as so far observed, may be recognized as occurring at three stages in our experimental husk infections. Six cases occurred about the time that the initial infection was being spontaneously terminated. Two cases were seen some months after the initial infection had been eliminated, and we believe they may have been associated with the resumption of growth by worms that had been inhibited in their development. Four cases occurred about twelve days after the re-infection of animals that had thrown off the initial infection some time before.

The four circumstances in which the syndrome has been observed, that is, three weeks after first exposure to infection, twelve days after re-infection, about the time the initial infection was being thrown off and when previously inhibited forms may have been resuming their development, are all times at which one might reasonably expect some kind of immune response to be taking place. This would suggest that the condition, the pathology of which

resembles that of an allergy, may indeed be related to such a response.

It will be noticed that in the three sets of circumstances in which our artificial fog fevers occur, mature worms will be either few in numbers or absent, while in those cases associated with the spontaneous termination of the infection even immature worms may not be present. This possibility means that the value of post-mortem examination in assessing the cause of naturally occurring cases of fog fever is limited. None the less, the examination of lungs from cases that have been diagnosed as fog fever by clinicians has so far revealed the presence of at least a few lungworms in all six of the lungs that have reached us in good condition.

It would appear from these findings that a proportion of fog fever cases are undoubtedly the consequence of lungworm infestation. The possibility that all fog fevers are associated with this cause cannot be discounted at this stage.

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Transliteration of Cyrillic Script

IN *Nature* of March 28, p. 548, the hope is expressed that other countries which use the English alphabet will adopt the Royal Society's scheme for the transliteration of Russian, Bulgarian and Serbian. It is therefore important to point out that the Permanent Committee on Geographical Names for British Official Use (an inter-departmental advisory body) considers the Royal Society's scheme to be unsuited to cartography. Far from letting things take their own course, the Permanent Committee has come to agreement with the United States Board on Geographic Names about the transliteration of Russian and Bulgarian. Serbian is officially written in both the Cyrillic and the Roman alphabets, and to transliterate Serbian geographical names into an English alphabet would produce objectionable variants of their official forms.

In the issue for February 27, 1890 (p. 397), *Nature* offered a system for the transliteration of Russian which was to "be adopted without delay" in the publications of eight leading British learned bodies, including the Royal Society, and which had the support of Russian and American authorities. So far as I am aware, it was not widely put into use, and for a good reason: a system of transliteration, once established in a big library, cannot be changed without great expense, delay and confusion.

The Royal Society has added one more to the dozen or so systems for the transliteration of Slavonic languages already established in British and American use. If agreement in the English-speaking world be possible, it will not be achieved without the co-operation of such bodies as the American Council of Learned Societies; but different English systems for the transliteration of a given foreign alphabet are required for different purposes. A good international system might be better, at least for postal and documentary purposes, than any good national system; but a bad one would be deplorable.

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