

THE NATURALIST IN GENERAL PRACTICE

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The recent reawakening of interest in observational research in medicine and in general practice in particular is exciting to all who take part in it, and as with many exciting things there is a tendency to regard it as something new, something that has not happened before and behind which there is no history and tradition. If we do this we deny ourselves the backward look into past experience and the help which, perhaps, we may unexpectedly find there.

I would like today to look back to see whether some of the paths we now tread have been travelled by others. The principles of our work are by no means exclusive to medicine and our exemplars of method may well not be doctors. Some of the naturalists of the past were in fact members of the medical profession but others were professional men who in their leisure applied themselves to the phenomena of nature around them.

English and European history is punctuated with the names of those who observed and recorded what they saw, but I would like to consider with you the work of two men from whose approach to these problems of their day we may learn a very great deal. One was a country clergyman, the other an eminent peer, banker, and parliamentarian. Neither Gilbert White of Selborne nor John Lubbock first Baron Avebury were doctors.

Gilbert White, curate of Selborne, who lived from 1720—1793 was an observer of little things, and a recorder of what he observed. He concerned himself exclusively with the natural history of his locality. The first flowering of a plant, the first sight of a swallow were noted meticulously and from his notes and correspondence came his work, *The Natural History of Selborne*, which should be known to all who seek to observe and record in medicine.

The questions to which White sought answers were sometimes descriptive. Among birds the leaf-warblers were a well-known group looking very much alike, yet by careful observation and recording White first showed that instead of one species there were three, the chiff-chaff, willow-warbler, and wood-warbler. Each

species was described in turn, its call-note accurately related to its description so that recognition by later observers seems comparatively simple. Let us exchange warblers for, say, virus diseases and it is at once clear that we today have the same problem, perhaps to be resolved by similar painstaking study of the characteristics, the little differences and peculiarities of behaviour that may reveal the presence of a type within a type.

White was not an experimental scientist. He observed and recorded what he saw, no more, no less, and drew conclusions from these observations. He made no attempt to influence the circumstances of environment surrounding the object of his study, and his interest was in the whole range of natural phenomena as is the interest of the present-day practitioner in the whole range of sickness in his practice. He has little to say about the health and sickness of Selborne, though he mentions shrew trees and the cure of rupture by passing the babe through the gap in a cleft willow-tree. Problems to his liking were the identification of the hitherto unrecognised harvest mouse, with the description of its nest in the cornstalks, or the controversy then current as to whether swallows and swifts migrated south in autumn or hibernated in the mud of ponds. That controversy seems strange to us now, but so no doubt will many of our present perplexities appear to an observer a century ahead.

The naturalist in practice today has as many opportunities before him as had the curate of Selborne, with advantages White never knew. There is today a background of scientific knowledge, within medicine and without; there is easy contact with like-minded colleagues working on the same or related problems, and an atmosphere of progress and advance in which he shares. The renaissance of general practice insofar as research is concerned is only part of a renaissance of observational study of natural history in many fields. White would have delighted in this and the tools in the hands of the modern naturalist would have amazed him. The camera with flash and telephoto lens, binoculars, good and efficient microscopes, tape recorders to record bird sounds, even the aqualung and other underwater devices would have been welcome to him, but I do not think that he would have regarded them as more than ancillary to the pen and paper which are at the hand of every general practitioner as he works.

As an observer and recorder White was followed by many others—Pennant, his correspondent, Hudson and later Darwin himself, but James Fisher describes him as the greatest unprofessional naturalist that England has produced. As an observer and recorder, however, of a somewhat different kind, Lubbock was not far behind him.

John Lubbock, son of Sir John William Lubbock, 3rd Baronet, himself a man of science, was born in 1834. While a director of the family bank he became a Member of Parliament and Vice-Chancellor of London University. Among his parliamentary activities were bills introducing Bank Holidays and relating to public libraries, open spaces and the preservation of ancient monuments. We, however, are concerned with his work as a naturalist as evidenced in published work from 1865—1894. While many analogies could be drawn from his work we will consider Lubbock's studies of communities since as general practitioners we are continually engaged upon the same task.

The particular communities with which Lord Avebury was concerned were those of the social insects, ants, bees and wasps, and his chief study was the behaviour of those creatures both as individuals and as members of a community. He had read the literature widely—studies of ants were fashionable particularly in France—and quickly learned to accept the reliability of his own observations and little else. Some of these observations were made in the field with no more equipment than a hand-lens whilst others (and here is the difference between his work and that of White) were made under conditions of his own creation, artificial contrivances in which an ant's nest was given a revealing wall of glass through which observations could easily be made.

The culture of ants in this way put at his disposal a number of communities, prepared for continued study in much the same way as the National Health Service provides each of us in practice with a community in which we can watch various processes at work. While many of his observations were made on the behaviour of the groups as a whole Lubbock was able to go to a stage further and identify and mark individuals within the group for special observation and study. This too is within our province since all the patients on our lists are readily identifiable and for each there is the means of maintaining observations in relation to the individual, the N.H.S. record card. Lubbock was able to watch the career of one ant, a queen, for fifteen years—and when she died her obituary appeared in the papers—a fact of supreme importance in days when it was thought an ant's lifespan to be a year only.

The kind of observations made, the note-taking based on the use of a lens and a stop-watch could be repeated, and indeed are being repeated in many general practices today. They constitute legitimate observational research. It may be argued that because he devised simple problems to test the behaviour of his ants Lubbock was modifying the circumstances under which the objects of his study behaved, that his natural history was not quite so pure as that of White. Nevertheless the experimental element in his work was

limited and his manipulation of the ants' environment can be paralleled by our influence on our patients and their environment as we work among them.

The essential need to treat patients, for humanitarian reasons, which is part and parcel of our work makes the observation of a disease process as a natural phenomenon, an exceptionally rare occurrence. As soon as we prescribe, even a placebo, we alter the circumstances pertaining to that illness in that patient, thus invalidating study of its subsequent course as pure natural history.

It would seem, then, that our naturalist in general practice must learn to observe, to record and to deduce from his observations. As an epidemiologist he can study people in health and sickness when they come to him. He can observe symptoms, signs, associations and differences. He can effect groupings and separations or identify new phenomena in the true Selborne tradition, but thenceforth, from the moment that he seeks a trial of a remedy, or advises on measures to promote or restore health his is the work of Lubbock, and the observation of the effects of his teaching is natural history in another quite acceptable sense.

There is one further lesson we may learn from these two men. Each earned his living in some activity remote from the field of work for which we admire and respect them. Each found time to add to the hours of a working day hours of study of the subject of his interest. We are fortunate in that our observations can be made in parallel with our daily work and no great effort of mind is called for as we change from recording as a routine to recording of the same problem with the answer to some perplexity in view. Neither White nor Lubbock had any formal training in the scientific method, we have had some at least, and neither required more elaborate equipment than could be improvised from the resources of a home.

Experimental research is essential and must go on, but there is need today for a counterbalancing development of observational research which, as we can see, is soundly based on firm traditions. For those who will take part in this the Hunterian aphorism applies, but in reverse. To them we can say "Don't try the experiment—think".
