searches in response to specific demands. The collection of material on which the searches were made consisted of more than half a million citations to journal articles in the biomedical field, input to the January 1964 and subsequent issues of the monthly *Index Medicus*. This collection is growing at the approximate rate of 200,000 citations per year. Articles from about 2,400 scientific journals are indexed at an average level of 6·7 terms per item using a controlled vocabulary of Medical Subject Headings (MeSH). Over three thousand demand searches are processed annually at the National Library of Medicine, additional searches being handled at regional MEDLARS centres in the United States, in the United Kingdom and in Sweden. The present study was confined to the United States. A demand search is conducted by a serial search of the index term profiles of the 700,000 citations on magnetic tape. This search is essentially a matching process; the index term profiles of journal articles are matched against a search formulation, which is a translation of a subject request into the controlled vocabulary of the system.

The principal objectives of the test programme included a study of the demand search requirements of the users: the determination of how effective and efficient the present service is in meeting these requirements: and how the requirements of users could be met in the future.

The results showed that on average the system retrieves about 65 per cent of the "major value" literature from its collection of data. Few of the individual search results, however, were in the area bounded by the average ratios ± 5 per cent. In fact, the results were widely scattered. Some of the searches appear to have performed well with high recall accompanied by high precision. Other searches had very unsatisfactory recall results. It seems that a rather different average result was expected. The report states that the system was expected to function in a high recall, low precision way, in the region of, for example, 75–90 per cent recall at 10–20 per cent precision. It is suggested that the reason why on average MEDLARS is operating at 58 per cent recall and 50 per cent precision may be because the searchers, unconsciously or consciously, choose to operate in this general area. MEDLARS is now retrieving an average of 175 citations per search; to operate at an average recall of 85–90 per cent, and an average ratio around 20–25 per cent, would mean that MEDLARS would need to retrieve in each search an average of 500–600 citations, which many users would not be willing to scan. Little is in fact known about the recall and precision requirements and tolerances of MEDLARS users. The report suggests, however, that a decision on this subject ought not to be fixed. Each user has his requirements and the MEDLARS demand search request form ought to be redesigned to cater for recall requirements and precision tolerances of each user.

How Did Mycenae Fall?

A SURVEY of available palaeoclimatological evidence by Dr H. E. Wright, director of the Limnological Research Center of the University of Minnesota, seems to cast doubt on the suggestion that the fall of Mycenae was brought about by a climatic change. This idea was put forward by Professor Rhys Carpenter in a book called *Discontinuity in Greek Civilization* (Cambridge, 1966) in which he suggested that the extension of the summer droughts into autumn and spring caused repeated failure of crops in southern Greece and thus the breakdown of the Mycenaean economy. Professor Rhys Carpenter suggested that this resulted in the abrupt fall of the civilization—in about 1200–1000 BC—an event which has never been adequately explained.

In the current issue of *Antiquity* (XLII, 123; 1968) Dr Wright reviews the evidence for this hypothesis which is available from pollen remains found in layers of soil dating from the time of the fall of Mycenae. He has found no indication of any vegetational change that could have accompanied a climatic change in the Mediterranean region during Mycenaean times. Analysis of pollen from soil layers on the southern Dalmatian coast, 250 miles north of Greece, has shown that the Mediterranean evergreen oak has dominated the landscape since 4300 BC with no sign of a climatic change. In north-western Turkey, although a reduction in the forests of beech and fir at about 2000 BC may reflect a change to a drier climate at that time, there was no significant change around 1200 BC.

In Peloponnesus, pollen from the Osmanaga lagoon near Pylos has shown that there was an increase in the growth of olive trees to about 40 per cent of the total vegetation at about 1000–600 BC. These must have been cultivated, for wild olives now form a very small part of the Mediterranean vegetation. This seems to indicate that olive-growing characterized the post-Mycenaean period—known as the Greek dark ages—from 1100 to 800 BC. Dr Wright suggests that at that time olives were the chief subsistence crop, whereas the Mycenaeans had a more diversified range of crops, which have left a poor pollen record. At any rate, the flourishing olives are evidence against a climatic deterioration, and Dr Wright is forced to the conclusion that there is no reliable scientific evidence to support the theory that climatic change brought about the downfall of the Mycenaean civilization.

Porton Revealed

THE recent furore in Parliament and the press over the secrecy of the biological warfare work carried out at the Microbiological Research Establishment at Porton has led to a concession, albeit a slight one, from the Government; beginning in late 1968 or early 1969, Porton will hold an open day for the first time. The Ministry of Defence announced this in the House of Commons on June 12. Mr John Morris, Minister of Defence for Equipment, made the announcement and added that "the scientists at Porton have been subjected to quite intemperate attacks recently. . . . I hope the open days . . . will relieve any public anxiety which may exist".

In answer to questions about the animals used at Porton, Mr Morris stated that all animals were well taken care of, but he believed that they could not be shown on television because of an 1876 Act of Parliament restricting photographs of animals. The animals used in experiments certainly seem to be those normally found in biological laboratories—26,882 mice, 720 guinea-pigs, 825 hamsters, 60 voles, 63 monkeys and 44 sheep last year—and since 80 per cent of the work of the laboratory is unclassified, it would seem unlikely that the RSPCA would have cause for com-