

A Computer-mapped Flora—A Study of the County of Warwickshire. By D. A. CADBURY, J. G. HAWKES, and R. C. READETT. 768 pp.. Academic Press. 1971. \$31.50

This publication, a heavyweight champion of nearly 6½ pounds, is one of the latest, and certainly the largest scion, of the old and honourable family line of British County Floras. It tends to leave a prospective reviewer gasping for words, like an architect suddenly confronted with a request for a critique of the great pyramid. The County Flora tradition represents a practical expression of the long and highly profitable co-operation between amateur and professional botanists in Britain, of which the Botanical Society *Atlas of the British Flora* is the most notable product to date. The present work, which includes flowering plants, ferns, and bryophytes, is the result of co-operation between the Birmingham Natural History Society and the Department of Botany of the University of Birmingham. Having started work along fairly traditional lines, the organizing committee introduced some radical changes in 1953. Recording was concentrated on a randomly selected 1 km square from each "tetrad" of 2 × 2 km squares of the British national grid, which fell within the boundaries of Warwickshire. The data collected were then put on to punched tape for later sorting and retrieval followed by automated map plotting. In a review primarily intended for consumption abroad, it is inappropriate to dwell on the finer details of the publication. Suffice it to say that it contains in good measure all the usual introductory ingredients. No less a figure than William Shakespeare himself is called upon to give testimony among the early records of the plants of his native county.

The real interest for readers outside Britain lies in the use of the computer for data handling and the incremental plotter for the production of the numerous distribution maps. The relatively simple maps of the BSBI *Atlas* had at most three symbols. Here we are confronted with no less than nine symbols representing nine major habitats. Thus if a species occurs in one locality in woodland a vertical line is printed, while if in another water is preferred, a W is shown on the map. Since, of course, many species occur in several habitats within a limited area, the result is a multiple superposition of symbols for many squares. The situation is further complicated as each symbol can occur in a light form (rare to occasional) and a heavy form (frequent to abundant), thus involving a total of 18 possibilities. Keys to the symbols are provided with each map, but are open to criticism in that they are printed at a different scale to the maps themselves, thus making the long and short vertical and horizontal lines potentially subject to confusion. A useful range of overlays is provided and through these, distributions can be compared with the patterns shown by topographical and physical features. While the reviewer has unstinted admiration for the conception and ingenuity of the scheme, he has grave reservation about the utility of the graphical presentation. The maps are so replete with information, that it is very difficult to interpret them in the manner intended and the reader is presented with a real problem in visual coordination. A second series of much simpler maps generated by a line printer, illustrates the distribution of 58 of the rarer flowering-plants and 184 of the more frequent bryophytes.

The Birmingham group has produced a study of extreme interest with regard to their approach to the problems of data handling and automated mapping, and in these respects I confidently commend this work to the wider readership beyond the shores of Britain. All those concerned with biological mapping should certainly make a point of examining this Flora; their interests are well catered for by introductory chapters that cover these aspects of the project. Regrettably its very high cost will place it beyond the reach of many interested British users (although it must be noted, a very generous pre-publication price was offered). If some aspects of the end product are less than completely successful, we should nevertheless have a real sense of gratitude for this most enterprising example of the application of modern techniques to a basic format hallowed by time and the activities of distinguished predecessors. There is much to be learnt from the Birmingham experiment in the difficult art of putting new wine into old bottles.—J. F. M. CANNON, Dept. of Botany, British Museum (Natural History), Cromwell Rd., London SW7 5BD.



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