

Further Progress with the Early Threshing Machine: A Rejoinder

By STUART MACDONALD

SOME years ago, I spent a week cloistered in the fine library of the Royal Agricultural Society in Belgrave Square.¹ Threshing machines were not then a primary interest, and their investigation was not the reason for my visit, but the Society's excellent collection of the various editions of the Board of Agriculture's *Reports* was enticing, and reporters' interest in the threshing machine proved infectious. Clearly, the reporters recognized the significance of such a recent innovation, and the form which this recognition took made it equally clear how their evidence should be presented.

The paper published in Volume XXIII of the *REVIEW* set out in map form evidence from the earliest and the latest *Reports* about the prevalence of threshing machines in individual counties.² This suggested that threshing machines were originally much more common in north-east England and south-east Scotland than in the rest of England, and that these regions retained much of their pre-eminence. The view that much of England showed some reluctance to adopt the threshing machine in the early nineteenth century was supported by a mass of literary evidence, but no single reason emerged to explain this reluctance. Instead, there were at least a dozen explanations, each of which appeared to have some credibility and, more important, to have had some contemporary credence. Though some explanations, especially those concerned with wage rates and farm size, were more plausible than others, no attempt was made to rank explanations in order of importance. No doubt this is a failing, but the

evidence did not permit such treatment, and there was every reason to assume that explanations varied with time and place. As Dr E. J. T. Collins has pointed out, while there may be one good reason for accepting an innovation, there are likely to be many good excuses for rejecting it.³

Impressed by evidence of resistance to the early threshing machine, but frustrated in all attempts to quantify it, the logical alternative seemed to be to resort to the work of Hobsbawm and Rudé, which has enumerated resistance to the threshing machine.⁴ I merely illustrated the coincidence between counties where reporters complained about the threshing machine in the last edition of the Board of Agriculture's *Reports* and those counties visited by Captain Swing two decades later. My conclusion, as inadequate as it seems, was that there had been widespread and continuous dissatisfaction with the threshing machine through much of England before 1830, and that this had hindered the diffusion of the innovation.

Mr Fox disagrees with me on several points. Firstly, he asserts that there were many more than "several" threshing machines in each of Berkshire, Dorset, and Hampshire by the end of the first decade of the nineteenth century. Secondly, he suggests that I have been misleading in noting that only 390 threshing machines were broken in twenty-one counties during the riots of 1830 when, in fact, ninety-seven of these were destroyed in Wiltshire alone, and it is possible that a similar number was in existence in Berkshire. Thirdly, he claims that the threshing machine was more than just a focal point of

¹ A part of the Society's archives has now been removed to the Museum of English Rural Life at Reading University.

² Stuart Macdonald, 'The Progress of the Early Threshing Machine', *Agric. Hist. Rev.*, XXIII, 1, pp. 63-77.

³ E. J. T. Collins, speaking to the Joint Conference of the British Agricultural History Society and the Institute of British Geographers Historical Geography Group, London, 6 December 1975.

⁴ E. J. Hobsbawm and George Rudé, *Captain Swing*, 1969.

discontent in 1830, and was the primary cause of the riots in central southern England. Many threshing machines in the area at this time, it seems, had been constructed on a small scale by local builders. I am grateful to Mr Fox for raising these points because it is always pleasing to know that others are actively engaged on the subject, and because they obviously demand an answer.

The Board of Agriculture's *Reports* do not say how many threshing machines there were in each county. Would that they did, but even the reporters could hardly have known for sure. Instead, each described the situation in his own way and in his own words, and these were the words chosen for my own rough-and-ready categories. I will not dispute the dictionary definition of "several," but certainly it comes somewhere between few and many and that was all that was required of it. To imply more precision than that would have been an abuse of the evidence. Mr Fox claims thirty or so threshing machines for each of Berkshire, Dorset, and Hampshire by 1815, and if he chooses to interpret that as "many" rather than "several," it would be unreasonable to complain. By the standards of the south of England it may well have been many. The latest Board of Agriculture's *Reports* claim a "considerable" number of threshing machines for all these counties. In Derbyshire that term meant a total of twenty-one threshing machines. This number I mentioned in my paper and also translated as "several." In general, I was suspicious of extravagant claims from reporters who then proceeded to identify individual threshing machines. That seemed to suggest that the machine was still something of a rarity, and it was not an approach adopted where the threshing machine was most common. I also warned that some claims about the early threshing machine were ridiculously wild, demanding extreme caution in their interpretation, and Mr Fox has produced an example. If the number of threshing machines in Berkshire in 1814 was well in excess of thirty, it is on the word of a Reading diarist, a man who, in years of undisciplined scribbling, rarely

concerned himself with agriculture, and only once turned his attention to threshing machines—to proclaim that they had almost superseded the use of the flail.⁵

Perhaps I was remiss in not explaining the high concentration of threshing-machine incidents in central southern England during the Swing Riots, but material which is not original should be treated with courtesy and perhaps some caution. The discovery is that of Hobsbawm and Rudé, and reference was therefore made directly to their work and indirectly to the secondary sources available for this area and used extensively by Hobsbawm and Rudé.⁶ It may be that many fewer cases of machine-breaking escaped the attention of Hobsbawm and Rudé in central southern England than in other parts. The existence of 100 or so threshing machines in each of Wiltshire and Berkshire in 1830 is not at all surprising, certainly not nearly as curious as the apparent shortage of machines to break in other southern counties—a matter to which I drew attention in my paper.

What Mr Fox has failed to appreciate—and I must accept blame for being insufficiently lucid in the presentation of my thesis—is that the whole argument is based on comparison. My thesis held that the threshing machine was always much more acceptable in the north than in the south in the early nineteenth century. In absolute terms, thirty, or later 100, threshing machines in Berkshire may seem a lot, but in relative terms the numbers are unimpressive. So, too, is the rate of diffusion, accepting Mr Fox's claim that the number of threshing machines in central southern England more than doubled between 1815 and 1830. In Roxburgh there were only ten machines in 1795, but between thirty-six and forty by the end of 1796.⁷ It is with that sort of rate of diffusion that I was making comparison and with total numbers that differ by an order of magnitude from those of Mr Fox.

⁵ Anon, *Reading Seventy Years Ago*, Reading, 1887, p. 32 (Reading Public Library, Local Collection, R/DX).

⁶ Hobsbawm and Rudé, *op. cit.*, preface and pp. 150, 371.

⁷ Robert Douglas, *Agriculture of Roxburgh and Selkirk*, 1798, p. 57.

Northumberland is a larger county than Berkshire, and one in which the threshing machine was described as being in "general" use, but it is not primarily a corn county. Threshing machines of the Meikle kind were employed there by the late 1780's, and by 1800 they had just begun to figure in farm advertisements in local newspapers. As virtually all such advertisements indicated the disposal rather than the adoption of the machine, this method of tracing adoption of innovation must allow for a time-lag of perhaps a decade. By 1825 some 246 second-hand Northumberland threshing machines had appeared in just one local newspaper, and by 1840 543 machines.⁸ It is reasonable to assume, though it cannot be proved, that these machines had been adopted by 1815 and 1830 respectively. It is also reasonable to assume that there were other threshing machines, perhaps many others, which appeared in other papers or which never figured in newspaper advertisements. Moreover, the numbers are of only those machines where the exact location has been traced, an exhausting process, but one which avoids the dubious extrapolation in which Mr Fox indulges.

I tried to emphasize that the threshing machine typical of the north was large and expensive and static, and altogether a much more elaborate machine than that typical of the south. For instance, while the hand threshing machine and portable machines attracted considerable attention in much of England, there is absolutely no evidence of even a single hand machine or a portable machine in Northumberland before 1830. Mr Fox estimates that many southern machines would have cost about £10 in 1830, making a total capital investment in threshing machines in Berkshire of at least £1,000 by that date. Let us treble that figure to £3,000 to be rather more safe. Of the

201 Northumberland threshing machines advertised in one newspaper in the decade 1831-40, the power source of 104 can be determined: 65 per cent were horse driven (95 per cent of these by four or more horses), 27 per cent were water powered and 8 per cent steam powered. Estimates of costs vary greatly, certainly some machines cost well over £1,000—but £500 for a water powered machine, £300 for a steam-powered one, and £100 for a horse-driven thresher would be cautious averages for 1830.⁹ Assuming a conservative 543 threshing machines in the county by 1830, the capital investment would be in the order of £120,000. It is not in isolation, but in comparison with the north, that the diffusion of the early threshing machine in southern England seems so sluggish. As there were no disturbances in the north in 1830, where the threshing machine was so predominant, and as there was considerable reaction against the threshing machine in the south, where it was comparatively unimportant, it does not seem too outlandish to suggest—and I did no more—that the threshing machine may not have been the only cause of discontent.

Mr Fox is probably quite right to stress the importance of local builders of threshing machines, though contemporary opinion generally queried the wisdom of very small, cheap machines. Unfortunately, it is difficult to trace the activities of such entrepreneurs, much less the impact they had. My own investigations into one northern builder uncovered his claim that he had not only invented the threshing machine but also had thereby permitted the construction of over 1,000 machines in Durham and Northumberland alone by 1810.¹⁰ I am relieved that Mr Fox has not produced such "evidence" for Berkshire.

In that my paper was imprecise about the magnitude of the early threshing machine's impact in the north, it was at fault. The

⁸ These figures are explored in much greater detail in Stuart Macdonald, 'The Threshing Machine in Northumberland before 1850', *Tools and Tillage* (forthcoming). The scale of threshing-machine usage in the county has already been indicated in J. A. Hellen 'Agricultural Innovation and Detectable Landscape Margins: The Case of Wheelhouses in Northumberland', *Agric. Hist. Rev.*, xx 2, 1972, pp. 140-54.

⁹ Stuart Macdonald, 'The Development of Agriculture and the Diffusion of Agricultural Innovation in Northumberland, 1750-1850', unpubl. Ph.D. thesis, University of Newcastle, 1974, pp. 462-3.

¹⁰ Stuart Macdonald, 'John Raistrick, Civil Engineer of Morpeth', *Durham University Journal* (forthcoming).

dominance of the threshing machine in the north compared with the south is the very heart of the thesis, and I had hoped that the weight of evidence would encourage its acceptance. There is absolutely no evidence that the early threshing machine had been accepted in the south by 1815 or by 1830 on anything like the scale on which it had been accepted in the north. To be challenged with evidence from Mavor's Board of Agriculture's *Report for Berkshire* is astonishing. Writing of threshing machines, Mavor is resolute in declaring, "I have little doubt that, in time, every consider-

able farmer will be furnished with one, as is usual in the North of England, and the more improved parts of Scotland."¹¹ Whichever of the several definitions of "considerable" is chosen this time, there was a substantial disparity between north and south which, despite the enthusiasm for the threshing machine of Mr Mavor and Mr Fox, was still apparent in 1830.¹²

¹¹ W. Mavor, *Agriculture of Berkshire*, 1809, p. 136.

¹² There seems no disagreement on this point: e.g. Hobsbawm and Rudé, *op. cit.*, p. 360; E. J. T. Collins, 'The Diffusion of the Threshing Machine in Britain 1790-1880', *Tools and Tillage*, II, 1, 1972, p. 24.

Notes and Comments

WYE COLLEGE LIBRARY CATALOGUE

The Library of Wye College, Ashford, Kent, has published a Catalogue of agricultural and horticultural books published between 1543 and 1918. In addition to some scarce early items by authors such as Blith, Fitzherbert, Markham, and Weston, the catalogue lists a wide range of eighteenth- and nineteenth-century books, runs of little-known journals, and of course sources particularly valuable for the study of Kentish agriculture. Copies, price £1.50, may be obtained from the Library.

BOARD OF AGRICULTURE COUNTY REPORTS

The second series of the Board of Agriculture's county reports published between 1798 and 1817 are now available in a microfiche edition. Details may be obtained from EP Microform Ltd, Bradford Road, East Ardsley, Wakefield, West Yorkshire WF3 2JN.

SOCIETY FOR A CHESHIRE RURAL LIFE MUSEUM

The Cheshire County Museum Service proposes to establish a Society for the study and collection of material relating to agriculture and rural crafts in Cheshire. There is already the basis of a collection of farm machinery, tools, and the personal possessions of the Cheshire country community, and it is hoped to develop eventually a Museum of Rural Life in Cheshire. Readers interested in joining the proposed Society should write to Dennis Petch,

County Museums Service, Weaver Hall, Northwich.

REVIEW

Volume I, Number 1, of *Review*, a Journal of the Fernand Braudel Center for the Study of Economics, Historical Systems, and Civilizations, has now been published. Articles are invited for publication and interested persons should write to The Editor, State University of New York at Binghamton, Binghamton, New York 13901.

WORK IN PROGRESS

Readers are reminded about the reply slip which was included in the last issue of the *Review*. Please make your return to Dr Hey as soon as possible.

ANNUAL CONFERENCE 1978

The 1978 Conference will be held from Monday, 3 April, to Wednesday, 5 April, at Traherne Hall, Residential Conference Centre, UWIST, Cardiff. The programme includes papers by Mrs Joanna Martin, Dr Edith Whetham, Dr John Chapman, Dr Richard Colyer, Dr David Howell, and Mr Geraint Jenkins. There will also be an excursion to the Welsh Folk Museum, St Fagans. Details of the conference, which is open to members and non-members, may be obtained from David Howell, Department of History, University College of Swansea.

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