AN ENQUIRY INTO SEASONALITY IN BAPTISMS, MARRIAGES AND BURIALS

Part One: Introduction Methodology and Marriages

L. Bradley

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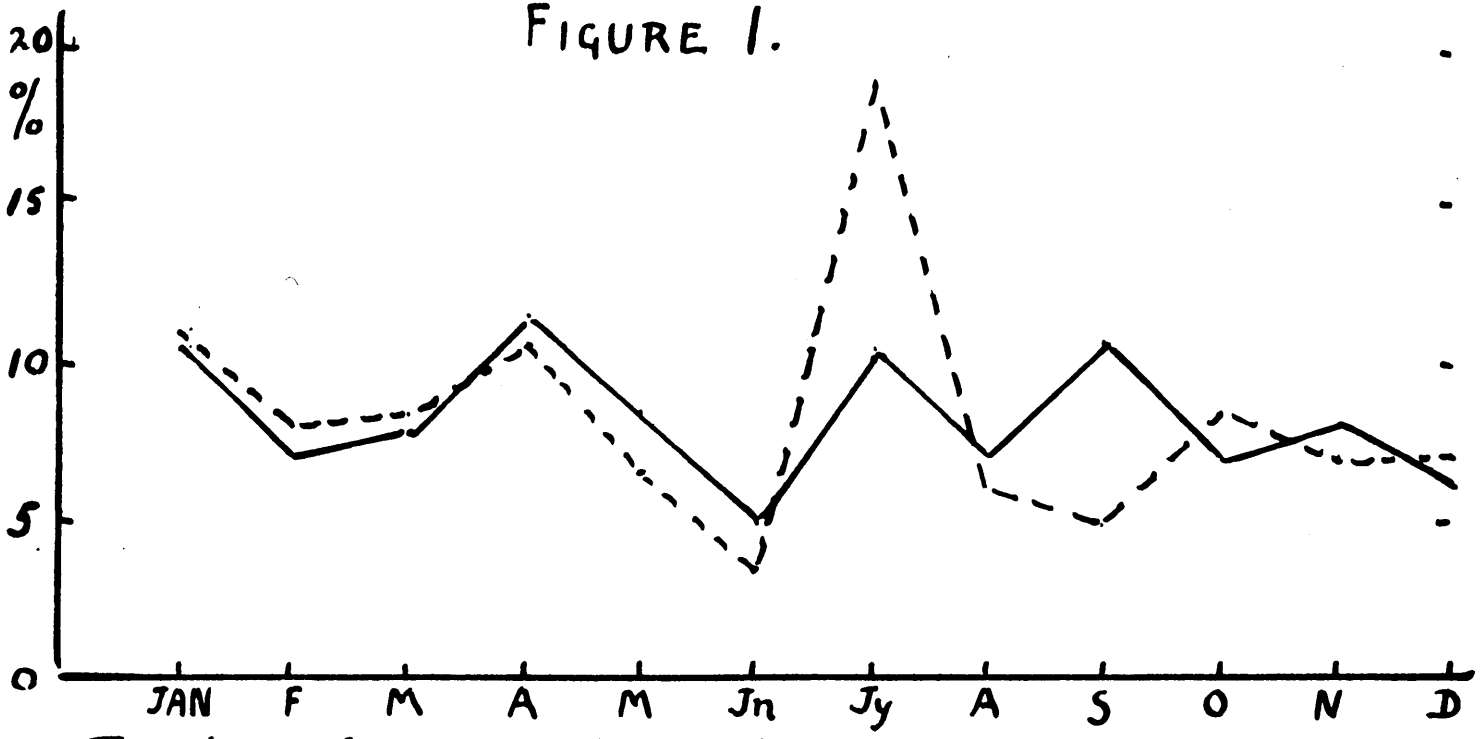
When parish registers are used for local population studies, attention is usually concentrated upon annual totals of baptisms, marriages and burials, and on the calculations which can be made from them and which have obvious implications for population change. It is not always realised that there is a great deal to be learned from a study of seasonality, that is of the fluctuations from month to month within the year. We might ask, for example, how the monthly distribution of marriages was affected by the seasonal nature of employment; how far the 'prohibited periods' for marriage, which the canons of the church still imposed in the 16th century, were actually effective and when they fell into disuse; whether the long hours of winter darkness affected the distribution of conceptions, and so of baptisms; whether a comparison of the distribution of marriages and of baptisms suggests that a high proportion of brides were pregnant; whether the seasonal distribution of burials throws any light on the main causes of death. These and many other such questions can be attacked, though not necessarily answered, by an investigation into seasonality.

As a first hypothesis we might suppose that seasonal factors affecting baptism, marriage and burial fell into three groups.

(a) The fundamental factors, persistent over considerable periods and common to the whole nation, or at any rate to large regions. These would include church law, such as prohibited periods for marriage; widespread and lasting occupational factors such as the long hours of work in harvest in rural areas; possibly

FIGURE 1.



The dotted line shows the monthly distribution of baptisms for ASHOVER, 1781-90. The full line shows the distribution of the total baptisms for five parishes, including Ashover, for the same decade. Note how this has eliminated the significant July peak in Ashover.

PARISH: WIRKSWORTH

County: DERBYSHIRE

YEARS: 1621-40

BAPTISMS

P.E.F. I

Conceptions

YEAR	MONTH OF CONCEPTION: Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Baptisms by Civil Year (totals)	Jan.-Apr.	May-Dec.	Conceptions by Harvest Year (totals)	Bastards	Comments
	MONTH OF BAPTISM: Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.						
1621	13	11	9	7	6	6	5	8	2	4	4	3	78					
2	4	6	8	6	5	7	4	2	12	3	6	9	72					
3	3	5	7	6	5	9	4	6	6	5	3	5	64					
4	11	11	15	2	4	5	6	6	12	7	7	5	91					
5	9	4	11	8	7	8	7	8	4	4	5	6	81					
6	9	6	11	14	11	4	5	5	7	5	10	5	92					
7	7	4	10	2	7	6	6	7	9	8	5	9	80					
8	2	5	10	12	9	6	3	8	6	4	9	8	90					
9	6	6	8	13	1	9	6	6	4	7	4	8	78					
1630	11	8	9	9	9	6	3	8	10	10	4	11	98					
1	8	6	6	4	11	4	2	5	7	5	9	2	69					
2	7	5	7	6	13	2	4	3	9	5	9	8	78					
3	13	7	9	11	9	5	6	6	9	8	8	3	94					
4	8	11	11	6	6	8	6	11	5	8	7	12	99					
5	9	12	9	10	10	4	2	6	9	4	13	3	91					
6	11	9	11	11	5	6	7	6	7	6	3	12	94					
7	12	8	12	8	8	5	5	4	1	7	4	5	79					
8	8	10	7	9	4	8	5	7	6	6	8	12	90					
9	15	7	8	9	1	5	5	13	12	5	6	10	96					
1640	8	5	16	8	8	5	6	6	12	7	7	8	96					
TOTAL	174	146	202	161	139	118	97	131	149	118	131	144	1710					

biological factors which may conceivably affect human mating and reproduction as they do those of animals.

(b) More localised, but still fairly persistent factors such as might be expected to cause significant local modifications of the fundamental pattern. In hill sheep-farming areas, for example, lambing might have a local effect similar to the more usual harvest effect in arable areas. Local customs, too, as will be seen later, can affect seasonality.

(c) Almost accidental factors. A 'slump' in marriages in May and June in the 1770s in Much Binding may mean no more than that the incumbent of the time habitually spent those months away from his parish. (1) The local historian will be interested in identifying and explaining these anomalies, but they will usually have little or no demographic significance.

The professional demographers have, until recently, concerned themselves almost entirely with the first group, which they have investigated by lumping together the statistics from a large number of parishes, often averaged over quite lengthy periods. This procedure is necessary if local and short-term factors are to be eliminated (Figure 1), but it has serious dangers if the investigation stops at this point. It may be obscuring some of the very factors which actually determine the pattern of demographic events and which are important if we wish to understand the detailed mechanism of population change. Recent work has shown considerable regional differences in demographic pattern which it is important to understand, and there are similar differences even within the regions. Even in a large-scale enquiry, then, there is a place for local studies. Those of us whose main interest is in local history or local demography must, of course be concerned with the fundamental factors, but we are especially concerned with the local modifications and with unravelling the interactions between local seasonality and local historical, social and economic circumstances.

What follows, then, is an attempt to see how far a quite simple method can be used to investigate and compare seasonality <u>in individual</u> parishes and to uncover the difficulties which such an enquiry will meet. It is in no sense a complete investigation, even for a single parish, and it will raise, rather than answer, questions - questions which, perhaps, other readers of L.P.S. will help to answer.

METHOD

I had available, on the Cambridge Group aggregation forms (Table 1), the monthly figures of baptisms, marriages and burials taken from the registers of six Derbyshire and six Nottinghamshire parishes (2). The parishes are varied in character, including a small market town, rural parishes of different sizes and parishes which, by the end of the 18th century, were becoming industrialised. The period covered is 1570 to 1840, though not all parishes provided figures for the entire period.

It was first necessary to decide on a time unit. The significant patterns for which we are looking are subject, in any year, to quite accidental variations which tend to obscure the pattern. We can reduce the effect of these accidental variations if we work in units of several years. But the time-unit must not be too long. Just as averaging the figures for several parishes may, as shown above, eliminate significant local differences, so averaging for too long a period may eliminate significant differences within the period. In the parish of GEDLING, for example, a significant feature of the marriage pattern is that December is an unpopular month for marriage until 1740, after which it becomes a popular month. If we average the results over two hundred years, 1630-1830 as is shown in figure 2, this feature is lost.

After some experiment, the decade appeared to be a suitable unit.

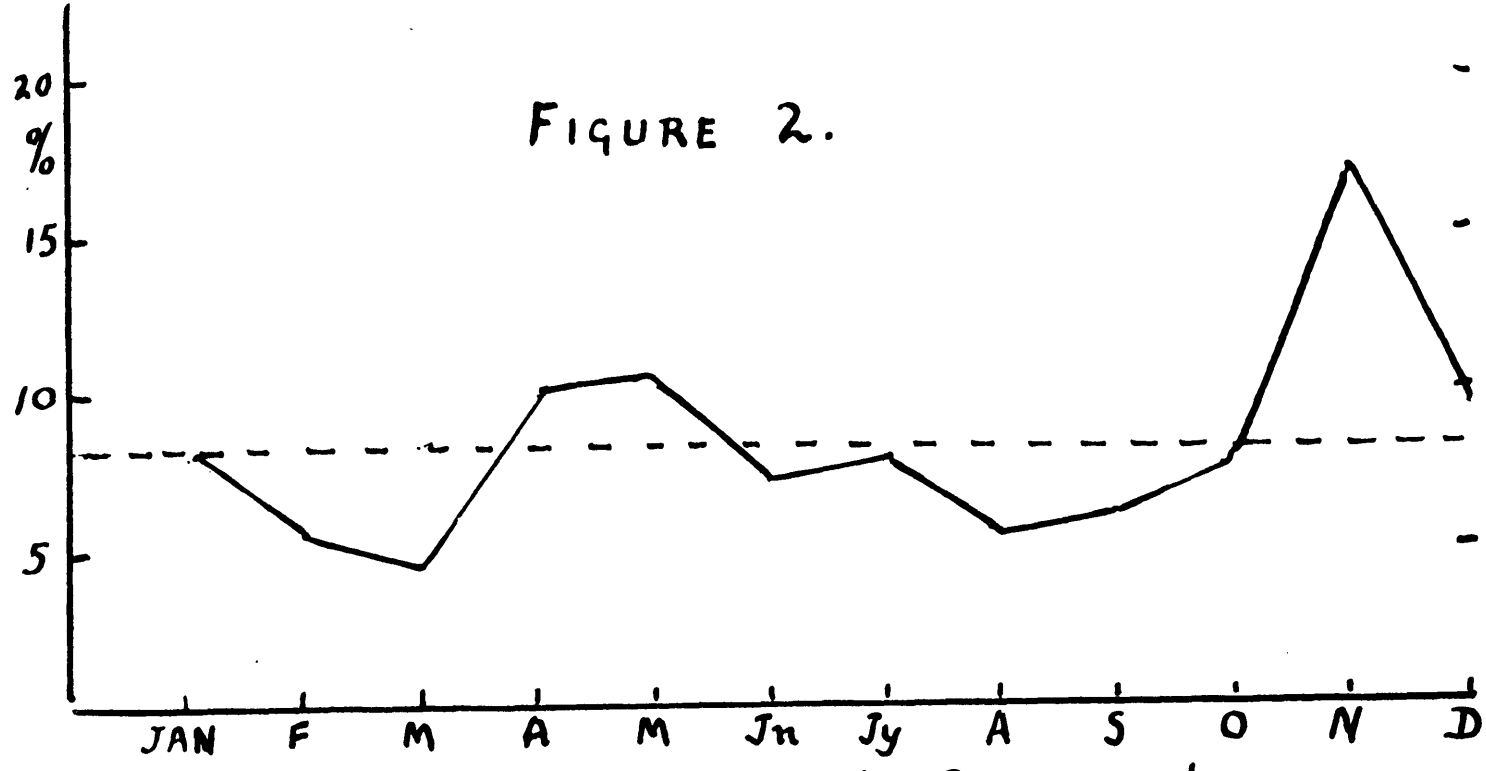
The following procedure was carried out for each separate parish:

(1) From the aggregation forms, decadal totals of baptisms were calculated for each month of the year, and each month's total was reduced to a percentage of the total number of baptisms for the decade (Table 2). In subsequent pages I have called each square of the decadal table a 'cell' - e.g. the March cell for 1631-40.

(2) Most people find it easier to appreciate statistical relationships from a graph than from a lengthy table of figures. Accordingly, the monthly percentages were displayed in two series of graphs:

> Series A. A separate graph was drawn for each decade, showing how the baptisms for that decade were distributed over the calendar months (Figure 3). The number at the right of each graph is the total number of baptisms for that decade.

FIGURE 2.



Distribution of total of marriages for GEDLING: 1631-1830.

TABLE 2

Wirksworth - Baptisms

	Jan	Feb	Mar	Apl	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1621-30													
Number	75	66	106	79	64	66	49	64	72	57	57	69	824
%	9.1	8.0	12.9	9.6	7.8	8.0	6.0	7.8	8.7	6.9	6.9	8.4	
1631-40													
Number	99	80	96	82	75	52	48	67	77	61	74	75	886
%	11.2	9.1	10.8	9.3	8.5	5.9	5.5	7.6	8.7	6.9	8.4	8.5	
1641-50													
Number	69	64	84	76	54	72	53	53	56	64	56	57	758
%	9.1	8.5	11.1	10.1	7.2	9.6	7.0	7.0	7.4	8.5	7.4	7.6	

etc.

FIGURE 3.

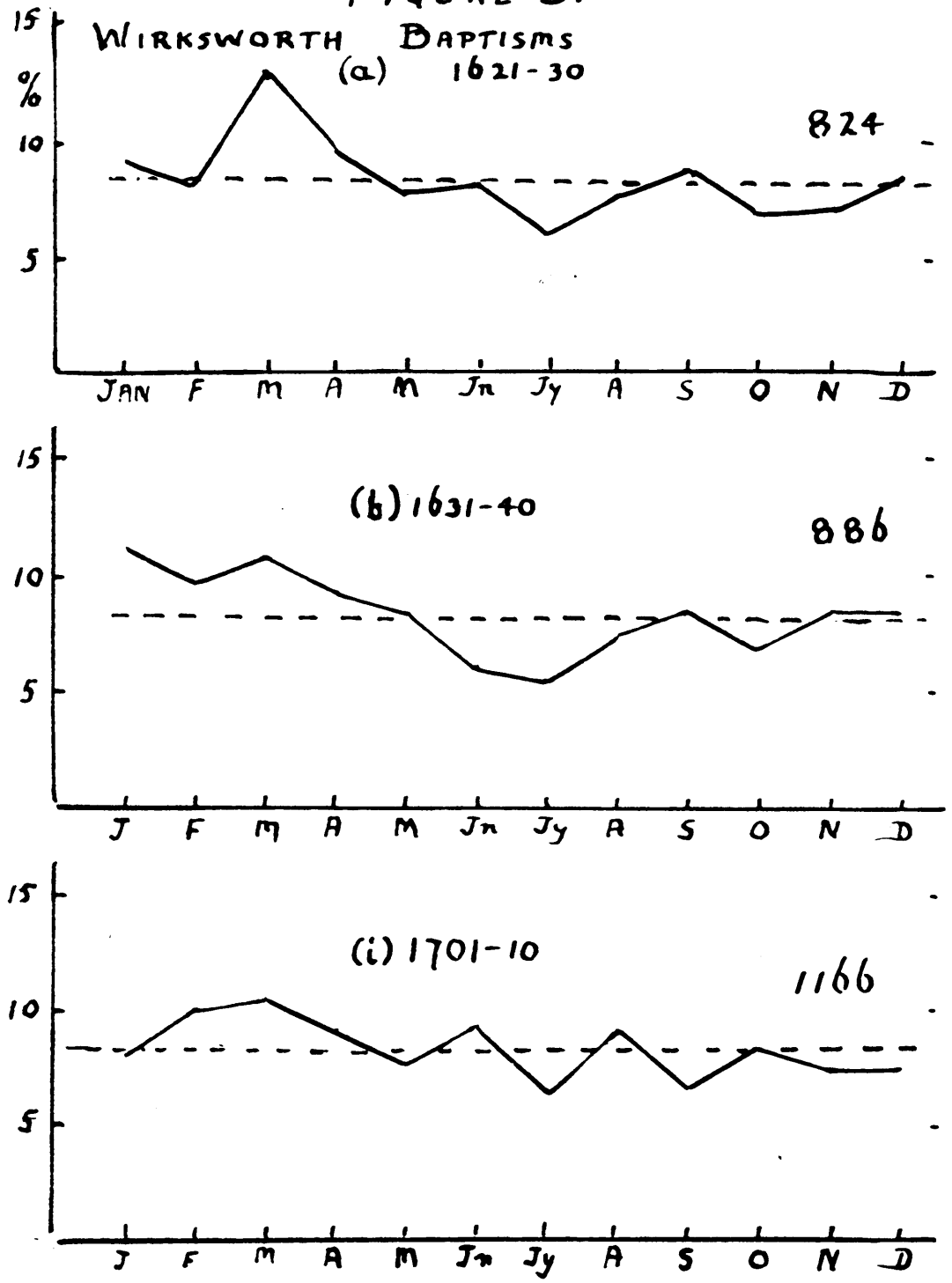
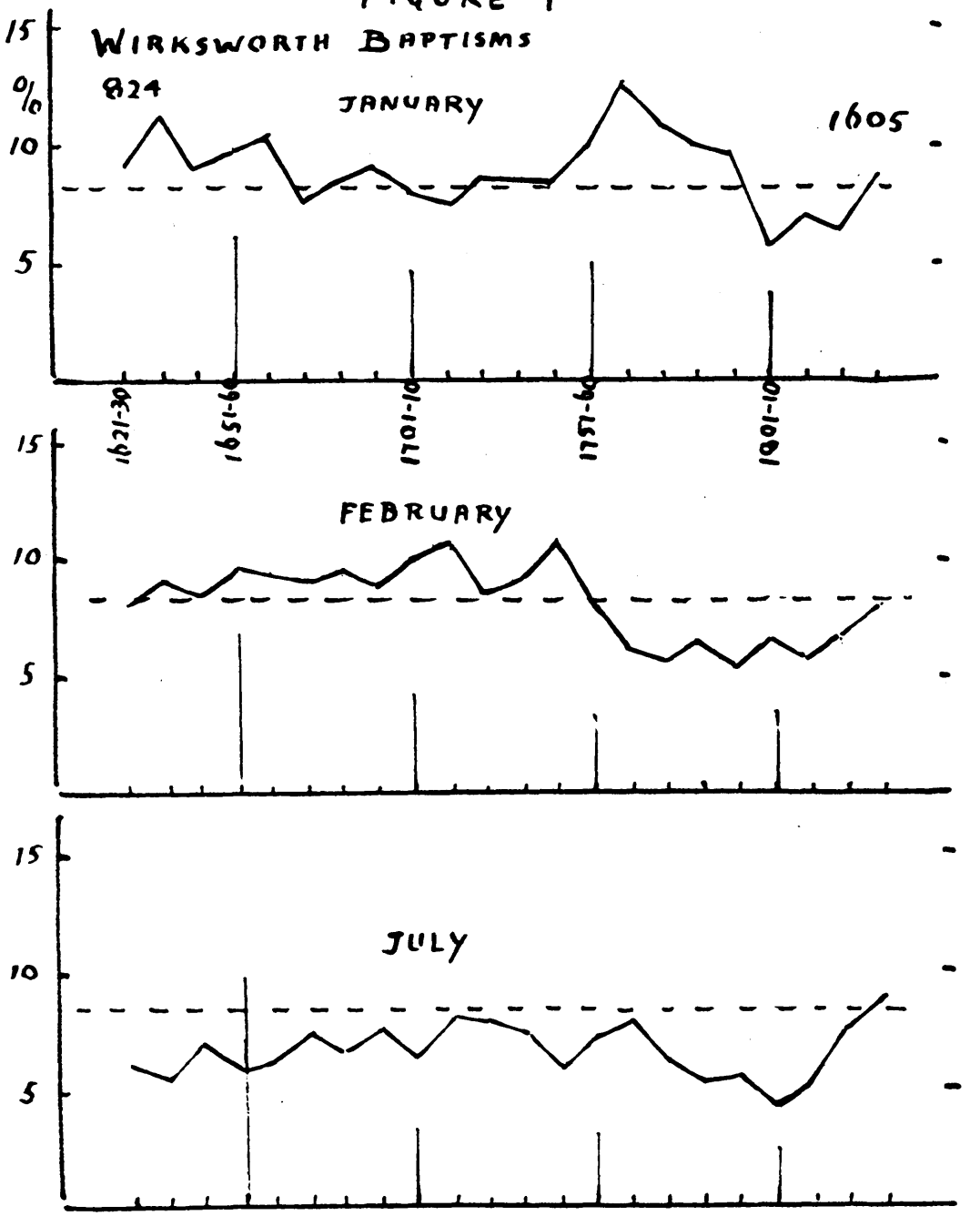

WIRKSWORTH BAPTISMS
(a) 1621-30
824
15
%
10
5
JAN F M A M Jn Jy A S O N D
(b) 1631-40
886
15
10
5
J F M A M Jn Jy A S O N D
(i) 1701-10
1166
15
10
5
J F M A M Jn Jy A S O N D

FIGURE 4


WIRKSWORTH BAPTISMS
824
1605
%
15
10
5
JANUARY
FEBRUARY
JULY
1621-30
1651-60
1701-10
1751-60
1901-10

Series B. A separate graph was drawn for each calendar month, showing how the percentage of baptisms attributable to that calendar month varied with the passage of the decades (Figure 4). The numbers at the left and right are the total number of baptisms in the initial and final decades.

The dotted line on each graph represents the average monthly percentage of baptisms, i.e. 100/12, or 8.1/3 %.

Although these two series of graphs convey essentially the same information, it was found useful to have both available.

(3) The process was repeated for marriages and for burials.

An expected difficulty soon emerged. The distribution of vital events over the month is, in any decade, the total result of both the seasonal factors discussed in the introduction and of pure chance. There will, for example, in any decade be marriages whose timing is dictated by the seasonal factors, but there are likely to be some few whose timing is a matter of purely personal and unpredictable choice. The fewer the total number of marriages in the decade, the greater is likely to be the effect of the purely personal element and the more difficult it will be to disentangle the seasonal elements. In the parish of BRADBOURNE, the 22 marriages in the decade 1711-20 were distributed as follows:

Month	J	F	M	A	M	Jn	Jy	A	S	O	N	D
Number	2	3	0	1	3	2	2	1	1	1	3	3
%	9.1	13.6	0	4.5	13.6	9.1	9.1	4.5	4.5	4.5	13.6	13.6

Had one marriage taken place in March instead of February, one in April instead of May and one in October instead of November, the distribution would have been:

Month	J	F	M	A	M	Jn	Jy	A	S	O	N	D
Number	2	2	1	2	2	2	2	1	1	2	2	3
%	9.1	9.1	4.5	9.1	9.1	9.1	9.1	4.5	4.5	9.1	9.1	13.6

Which, as Figure 5 shows, is a substantially different pattern. But if the same shift of marriages had happened in WIRKSWORTH (1721-30), where the actual distribution of 114 marriages was:

FIGURE 5.

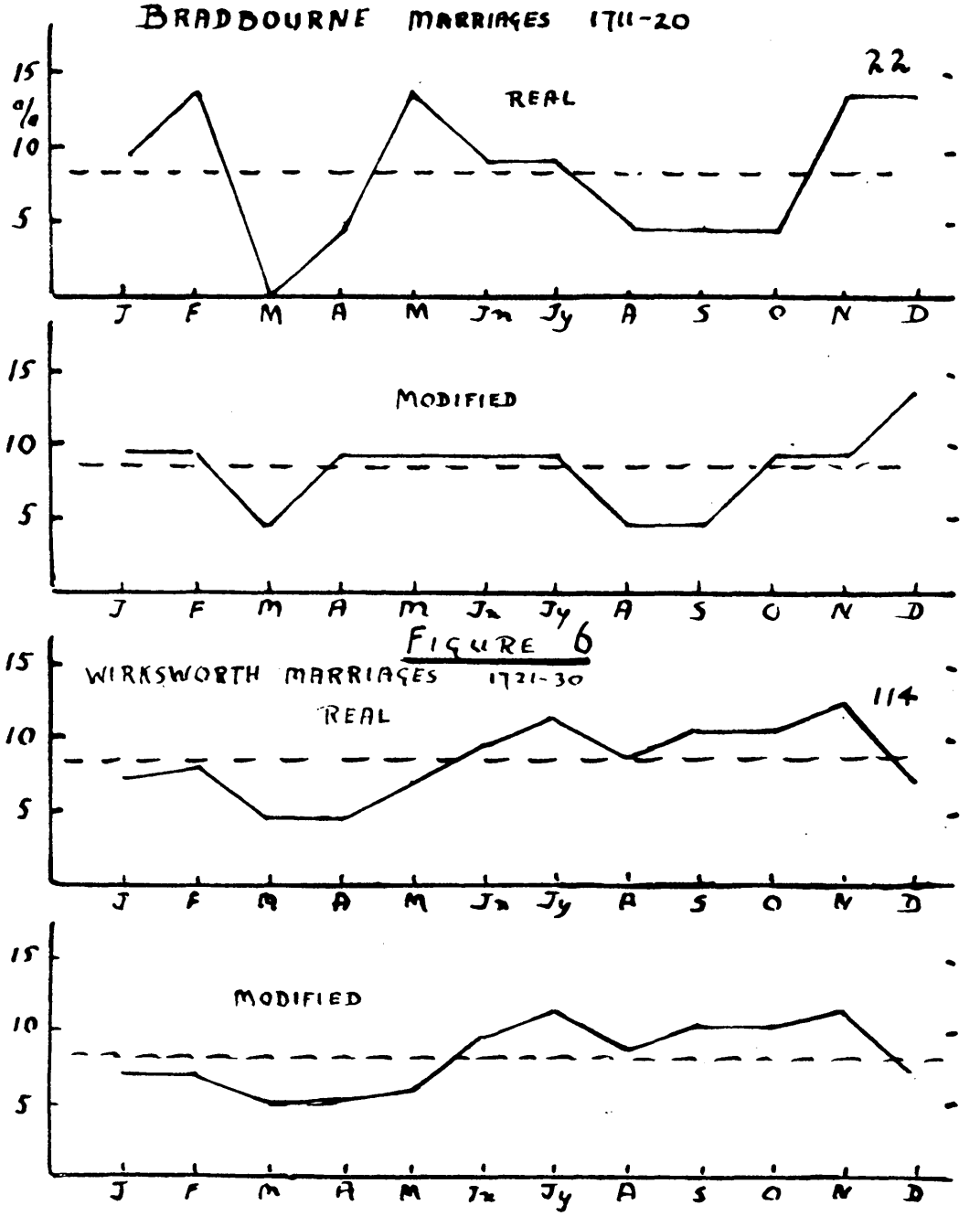


FIGURE 6

Month	J	F	M	A	M	Jn	Jy	A	S	O	N	D
Number	8	9	5	5	8	11	13	10	12	11	14	8
%	7.0	7.9	4.4	4.4	7.0	9.7	11.4	8.8	10.5	9.7	12.3	7.0

we would have arrived at:

Month	J	F	M	A	M	Jn	Jy	A	S	O	N	D
Number	8	8	6	6	7	11	13	10	12	12	13	8
%	7.0	7.0	5.3	5.3	6.1	9.7	11.4	8.8	10.5	10.5	11.4	7.0

which makes little difference to the pattern (Figure 6).

Where the number of events is small, then, the element of chance may distort the whole picture. Figure 7 shows the marriage graphs for BRASSINGTON (1721-30). It is difficult to see any consistent pattern. This may either be because seasonal factors did not operate in this village, or it may be due to the effect of chance on the small decadal totals. Since the baptism graphs for the same village in the same period do not show this erratic behaviour, and the decadal totals of baptisms are much larger (of the order of 170), the likelihood is that the cause is the small number of marriages per decade.

This lack of consistent pattern from decade to decade is, then, common where the decadal totals are small, though there are parishes where the seasonal pattern is so dominant that even small numbers give consistent patterns. It follows that great care must be taken in interpreting the seasonal graphs whenever the decadal totals are small. This is especially likely to affect the marriage graphs, since marriage totals tend to be of the order of a quarter of the baptisms or burial totals. This is, of course, the reason for indicating the decadal totals on the graphs.

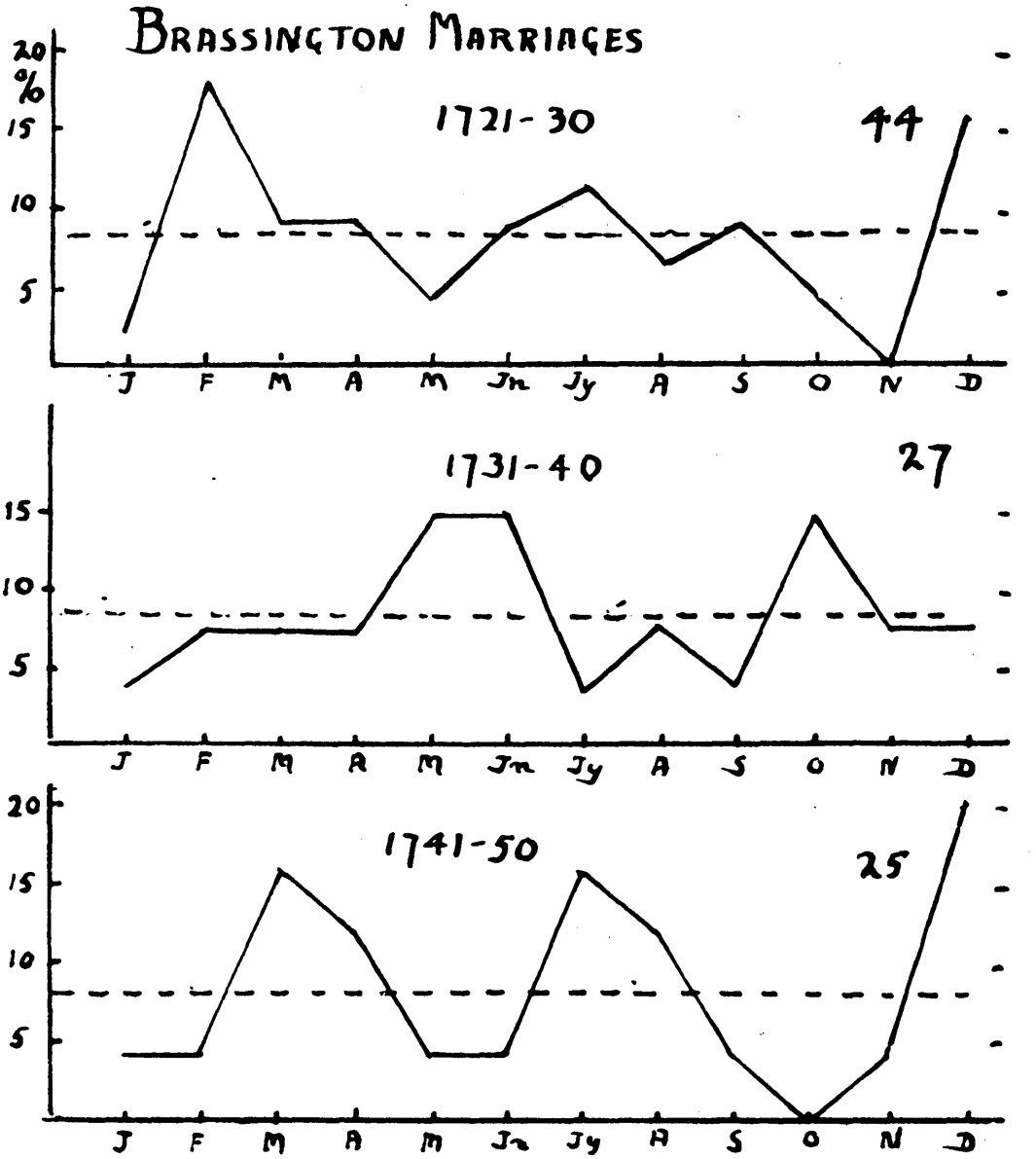
As a rough, but purely empirical rule, I have found it necessary to exercise great care in interpretation when decadal totals are less than 60, and I feel much happier if they are over 100.

MARRIAGE SEASONALITY

The marriage graphs of two parishes were, for reasons discussed above, so irregular as to defy analysis. The following discussion is, therefore, based on the graphs of the remaining ten parishes.

The only 'fundamental' factor for the existence of which there is concrete evidence is the ecclesiastical 'prohibited periods'. If

FIGURE 7


BRASSINGTON MARRIAGES
20
%
15
10
5
1721-30
44
J F M A M Jn Jy A S O N D
1731-40
27
15
10
5
J F M A M Jn Jy A S O N D
20
15
10
5
1741-50
25
J F M A M Jn Jy A S O N D

the effect of this factor is considered first, we shall then be able to look for further seasonal marriage phenomena and, possibly, make hypotheses about the underlying factors.

The 'prohibited periods' - though one gathers that the church discouraged, rather than prohibited, marriage in these periods - were:

Septuagesima to Low Sunday
Rogation to Trinity
Advent to Hilary

How far were they observed and what was their effect?

Although the date of Easter can vary by about a month, the addition of data by decades gives the effect of Easter varying by only about a week in the course of the decades (3), so that the timing of the prohibited periods is not, for our purpose, seriously affected.

The first prohibited period would affect marriages in roughly three weeks in February, the whole of March and two weeks of April. The graphs show that March marriages fell well below the average in every parish but one (See Figure 8 for an example). March was, indeed, by far the least popular month for marriages in the whole year throughout the period. Of a possible 234 March 'cells' over the ten parishes, the March percentage reached the average of 8.1/3% in only 32. Of these 32, 12 came in the 19th century, right at the end of the period. Of the 20 cells in the 17th and 18th centuries, 6 were barely above average. Of the remaining 14, 4 lie between 1641 and 1670, and 6 between 1731 and 1770. February marriages are distinctly below average in 6 parishes and above average in only one. April marriages are much more variable, being above average in five parishes and below in two. In both February and April, the percentage of marriages rose towards the end of the period.

It is impossible, in a short article, to present all the evidence, but I am left with the impression that this prohibited period was shortened at both ends, but that a reduced period, possibly from the beginning of Lent until Easter, was observed in most of the parishes, though with decreasing fidelity, until at any rate the second decade of the 19th century.

The second prohibited period would affect about two weeks in May. May marriages were above average in five parishes and oscillated about the average in five more. May, indeed, ranked high in

FIGURE 8

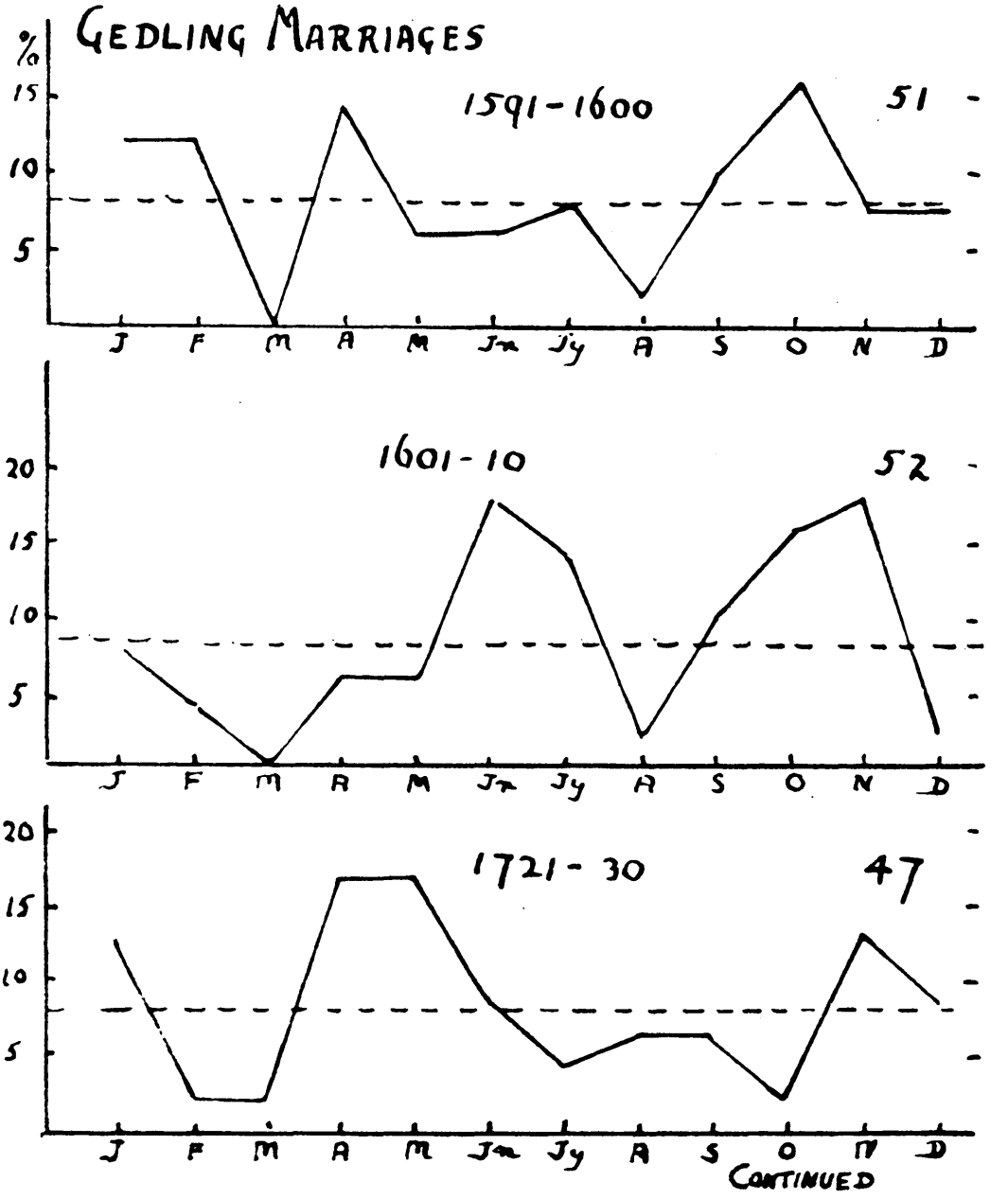
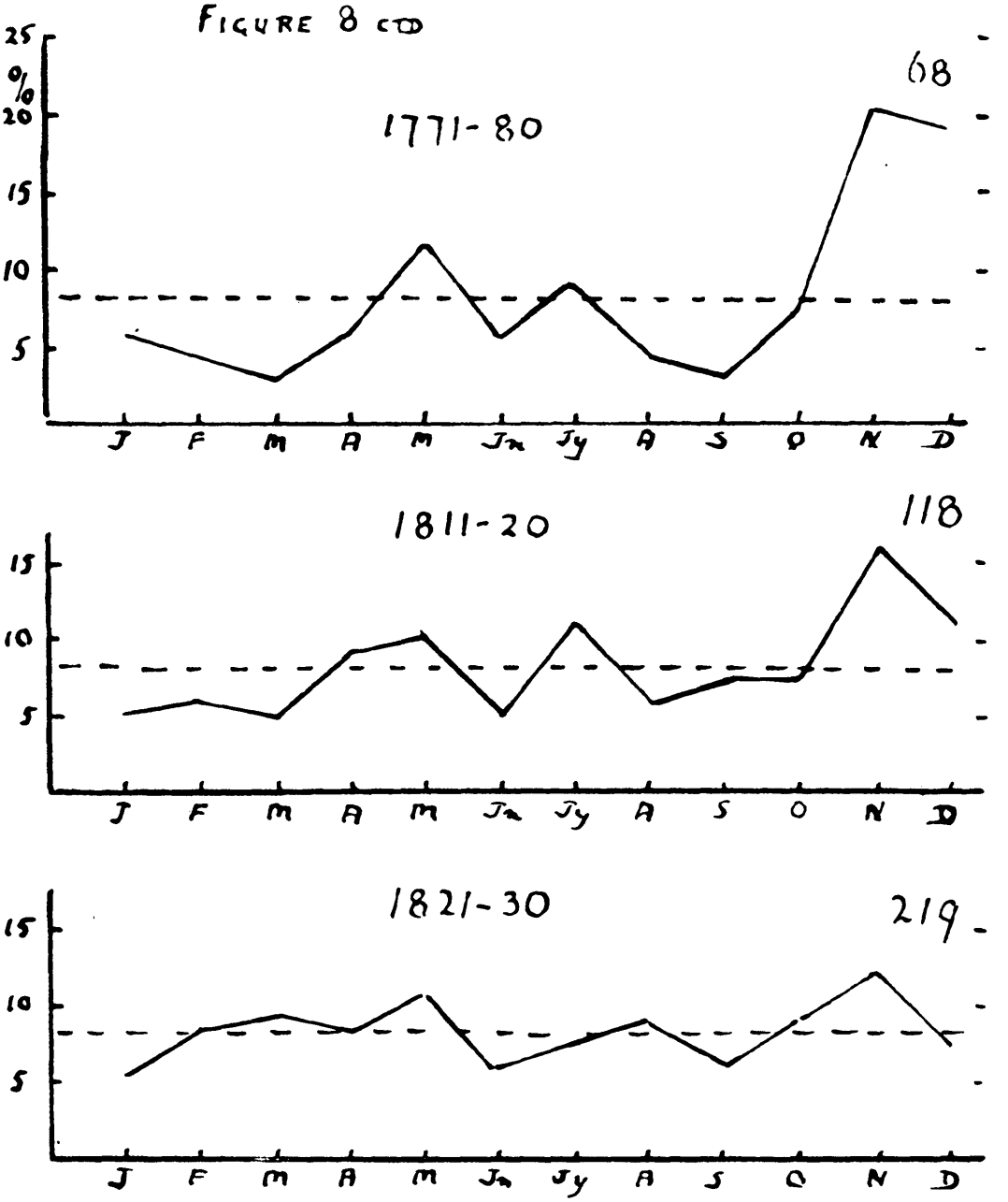

GEDLING MARRIAGES
%
15
10
5
1591-1600
51
J F M A M Jn Jy A S O N D
20
15
10
5
1601-10
52
J F M A M Jn Jy A S O N D
20
15
10
5
1721-30
47
J F M A M Jn Jy A S O N D
CONTINUED

FIGURE 8 cont'd



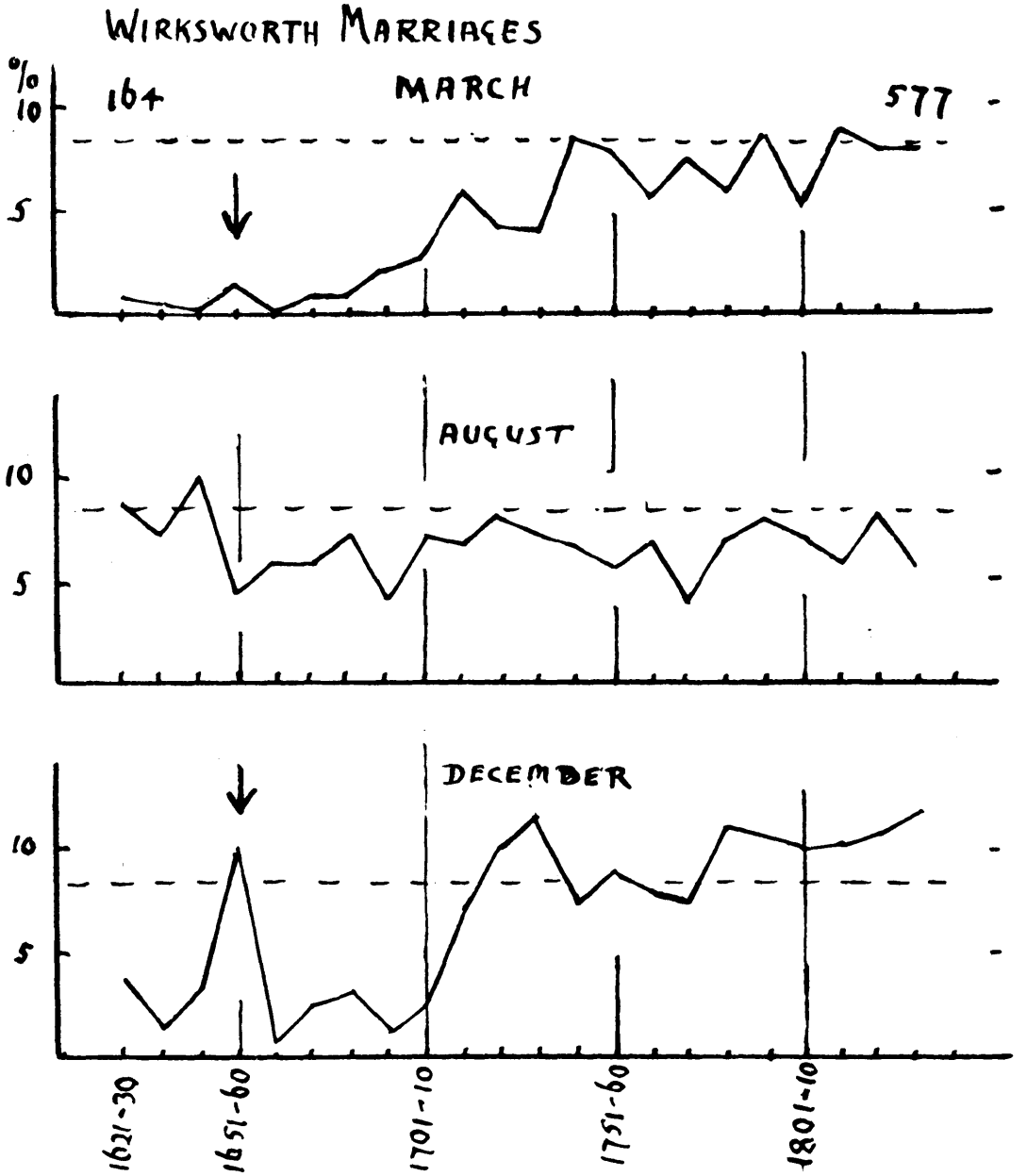
popularity, and it seems clear that this second prohibited period was not extensively observed in these parishes.

The third period would cover almost the whole of December and about two weeks of January. In the 17th and early 18th century, December marriages were distinctly below average in all ten parishes, but rose to the average at some date between 1720 and 1770 (varying from parish to parish) and then exceeded the average, sometimes by a considerable amount (Figure 8). There were only 10 'cells' in the 17th century out of 79 when the December percentage rose above the average, 8 of them between 1630 and 1660. December was, in fact, the second least popular month for marriage in the 17th century, but was amongst the most popular months by the end of the 18th century. January marriages showed great variation, but oscillated about the average, and certainly did not show the deficit which would arise from two weeks prohibition. The impression left is that the Advent prohibition was observed, though decreasingly, in most parishes until varying dates in the 18th century, except for lapses in the Commonwealth period which are discussed below. The extension to Hilary does not appear to have been regularly observed.

The persistence of the effect of prohibited periods until at least the early part of the 18th century and, in the case of Lent, until the early 19th century is in contrast to Miss Cowgill's suggestion (4) that their effect declined from the early 17th century. Unfortunately Miss Cowgill's graphs are in terms of the monthly number of marriages in successive periods of 50 years, whereas only a comparison of percentages will enable us to compare periods adequately.

It is interesting to note that there were distinct peaks in the marriage graphs in several parishes both in March and December in the Commonwealth period when, of course, the canons of the Anglican church were not officially observed. Peaks of this nature are indicated by the arrows in Figure 9. In most parishes the peak was for one decade only, but not the same decade for every parish, the peak sometimes occurring in 1641-50, sometimes in 1651-60, sometimes even in 1661-70. It would be interesting to discuss the size and dating of these peaks in the light of what is known of the religious history of each parish in the Commonwealth period, and especially of the shade of opinion of the incumbent and his patron. In parishes for which figures for the late 16th century are available, similar peaks are noticeable at that time when, according to Tate (5), unsuccesful attempts were made to have the prohibited periods abolished.

FIGURE 9


WIRKSWORTH MARRIAGES
%
10
5
164
MARCH
577
AUGUST
10
5
DECEMBER
10
5
1621-30
1651-60
1701-10
1751-60
1801-10

Throughout the period, the graphs show a summer trough which has no connection with the prohibited periods. In every one of the ten parishes, August is an unpopular month for marriage, exceeded in unpopularity only by March and December in the 17th century, and by March only in the 18th. September marriages are below average in every parish in the 17th century and in every parish except MATLOCK and WIRKSWORTH (for which see below) in the 18th. In the 17th century the trough included July in three parishes and October in five others. In the 18th century the trough was wider, sometimes covering four or five months. This may in part be due to the decreasing effect of the prohibited periods, for if the percentags of marriages are increasing in some months, they must be decreasing in others.

It is usually assumed that the factor underlying the summer marriage trough is occupational and connected with the harvest, the suggestion being that long hours of harvest work left no time for planning marriage. This sounds feasible - but is there any direct evidence? It is noticeable that August, at any rate, is just as unpopular in the less rural parishes.

Far and away the most popular month for marriage in these ten parishes (and, according to Cowgill, for York) was November. It is true that most other months are affected to some extent by either the prohibited periods or the summer trough, but was there any more direct factor operating in favour of November?

There do not appear to be any other marriage phenomena which are both common to all parishes and persistent over very long periods - what I have earlier called fundamental phenomena. We can now look for examples of the second group, prominent and fairly persistent, but peculiar to a specific parish. The graphs show a number of these, and I shall take one as an example. The WIRKSWORTH marriage graphs show a peak for September commencing in the 1731-40 decade and persisting throughout the rest of the century, September marriages sometimes rising as high as 16% of the decadal total. MATLOCK shows a similar September peak. As this phenomenon is even more strikingly visible on the baptisms graphs, further discussion will be left until part two of this article.

Finally, there is a marked tendency for the graphs to flatten out (i.e. for marriages to be distributed more evenly throughout the year) in the early 19th century (Figure 8). This means that the seasonal

influences of all kinds were losing their influence towards the end of our period.

NOTES

1. See, for example 'Parson Woodforde's Diary'

2. I am indebted for my statistics to the following:-

Derbyshire parishes

For Ashover, Brassington and Bradbourne to Mr. David Hool.
For Brailsford to Mr. Christopher Charlton.
For Matlock and Wirksworth to the Matlock Population Study Group.

Nottinghamshire parishes

For Arnold, Cropwell Bishop, Edwinstowe, Gedling and Oxton to Mrs. Janet Young.
For Burton Joyce to the Burton Joyce Population Study Group.

3. Cheney: Handbook of Historical Dates

4. 'The People of York: 1538-1812' by U.M. Cowgill in Scientific American, January 1970.

5. W.E. Tate: The Parish Chest - C.U.P. - Chapter 1.