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TREE-RING STUDIES IN THE SOMERSET
LEVELS: THE HONEYGORE AREA, 1983
AND 1985.

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Summary

Five neolithic trackways in the Honeygore area, running east-west between Westhay and Catcott Burtle, were examined briefly in 1983 and 1985; three were already known and two were new discoveries. Four of the tracks were made of birch brushwood bundles and the fifth, Honeybee, of hazel hurdles. Tree-ring studies of the birch (Betula) wood showed that a wide range of material had been collected, probably from nearby woodland, to build the Honeygore, Honeydew and Honeypot tracks. However, the slightly later Honeycat track was made of stems of more uniform age and size, largely 20-25mm in diameter, which may suggest an origin in previously cleared woodland.

The Honeybee hazel stems were uniformly 10-15mm in diameter and 2-4 years old; they almost certainly came from stools which had been cleared before, whether once or many times. Hurdles B and C were made of rods of very regular age and size, whilst those of Hurdle A were much more varied. The rods were much slighter, and hurdles more delicate, than later examples in the Levels.

Author's address :-

Dendrochronology Laboratory
Department of Archaeology & Prehistory
The University
Sheffield S10 2TN

0742 768555 x 6082

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Introduction

The Honeygore complex of tracks were first discovered in 1947 (Godwin 1960) and have since been examined on several occasions (Coles & Hibbert 1975; Coles et al 1985). The series of largely birch (Betula) brushwood structures have been revealed in very limited excavations, which have not yet enabled their relationships to be clearly understood. Recently some new trackways have been located; a total of five structures were identified, running approximately east-west over about 35m of one peat 'head'. Three, Honeygore, Honeycat (both known to Godwin) and Honeybee (newly discovered) were examined by D. Bedford, A. Wickenden and S. Loxton in 1983 (Coles et al 1985); two more, the already known Honeydew track and the new Honeypot, were exposed by quarrying in 1985 and excavated by J.M. Coles and S. Loxton (Coles pers.comm.).

All the trackways except Honeybee were brushwood bundle structures largely of birch (Betula). Honeybee consisted of a series of hazel (Corylus) hurdles. The trackways are briefly described below.

Tree-ring samples were collected from the recent excavations in order to further our understanding of the type of material collected by the track-builders, and of where and how the original

trees grew. Records of the ages and sizes of the stems were summarised for each trackway and compared between trackways. Data from the hurdles were assimilated into the corpus of information being collected from other hurdle trackways in the area. Studies of the data enable assessments to be made of the composition and quality of the woodland which was available to and selected by the track-builders, and may reveal changes both through space and time.

The Honeygore track

The Honeygore track was the heaviest in the 1983 group, and also the longest, now recorded over 1000m. Its character had already been determined from previous excavations (Godwin 1960; Coles & Hibbert 1975). The narrow 1983 trench revealed a single thickness of birch roundwood, which formed a walking surface about 1m wide. No pegs were observed, although they had been noted on previous exposures (Godwin 1960 19). Radiocarbon dates clustered around 2800 bc (Coles et al 1985), and environmental evidence indicated construction during the fenwood stage prior to the development of raised bog.

The roundwood stems and branches used in the track consisted entirely of birch (Betula), a wood in which the growth rings may not be easy to distinguish. They are often vague and very narrow, though occasionally clear enough for ring-width measurement. It is not clearly understood why the formation of latewood in birch should be so variable in character.

A total of 23 samples were collected; they consisted almost entirely of complete roundwood, except for two split in half and two so decayed that their transverse surface could not

be studied. Definition of the growth rings was possible, either precisely or approximately, in 15 samples.

Diameters of the stems are summarised in Table 1 and Figs. 1-2; they ranged from 9 to 102mm, with an average of 38mm. No concentrations were apparent and evidently stems of any available size were suitable for building the trackway. Stem ages, as far as they could be determined, ranged from about 6 to 36 years (Table 1, Fig. 1). At least 5 stems were probably cut in winter, judging by their wide outermost rings.

The Honeygore track thus incorporated birch wood of a wide range in size and age, probably collected at random from the nearest available source.

The Honeycat track

This structure had also been exposed before (Godwin 1960; Coles & Hibbert 1975) as a light birch brushwood track about 700mm wide. It may have been a short length of track which led towards the Honeygore track. Radiocarbon dates suggest construction within a range of 2100-2600 bc (Coles et al 1985), and palaeobotanical evidence showed the already forming raised bog at track level.

Similarly the Honeycat track was made entirely of birch, and 56 tree-ring samples were collected from the 1.5m excavation. Records of age and size are summarised in Table 1 and Figs. 1-2. Diameters ranged between 8 and 53mm, averaging 24.4mm. The histogram in Fig. 2 clearly illustrates that a preference for stems of 20-25mm in diameter could be determined; either deliberate size selection was being carried out in the woods or previous cutting had left a predominance of stems of a particular size. Only further experimental study could determine

whether size uniformity in a brushwood track serves any functional purpose.

Stem ages in the Honeycat track, where determined, averaged 8 years and ranged from 4 to 17 years. The age was also much more consistent than in the Honeygore track, although the difference in sample size must be taken into consideration. Several stems had a double or asymmetrical pith, indicating their origins in forking and branching pieces. Eleven stems suggested winter cutting.

The Honeycat track was thus made of birch stems which were generally smaller and less mature than those used in the Honeygore track. They were also more uniform, and suggested an origin in woodland which had been interfered with.

The Honeydew track

In 1985, a new exposure of the Honeydew track was examined by J.M. Coles and S.D. Loxton, just to the north of the Honeygore complex excavated in 1933 (Coles et al 1985). This brushwood structure had not been found by Godwin during his study of the Honeygore and Honeycat tracks (Godwin 1960), but was previously examined by Coles and Hibbert (1975). Radiocarbon dates of 2510 ± 90 bc (HAR-651) from previous excavations and 2690 ± 70 bc (HAR-6699) from the 1985 exposure suggested that the trackway was perhaps a little earlier or contemporary with the Honeycat track, but later than the Honeygore track (see Orme 1982).

For the first time in 1985, tree-ring samples were collected from this narrow brushwood structure, which consisted entirely of birch (Betula) stems (identified by A.E. Caseldine). Useful comparisons could be made between this material and the birch stems from Honeygore and Honeycat.

The trackway was represented by 24 birch samples. While definition of the growth-ring boundaries was as poor as in the material from Honeygore and Honeycat, approximate ages showed a greater maturity in the Honeydew stems. The data are shown in Table 1 and Figs. 1-2. None of the stems were less than 10 years old and the majority were in the 12-25 year range, as the scatter in Fig. 1 shows. The Honeydew material was more consistent in age than that from Honeygore and more mature than that from Honeycat.

In size, the Honeydew birch was largely between 10 and 40mm in diameter, although sample size was too small for any clear concentrations to emerge. Fig. 2 shows the stems to be slightly larger than those of Honeycat and more uniform in size than those of Honeygore.

No stems presented rings of sufficient clarity for ring-width measurement.

Thus the Honeydew track, as far as is known from this small excavation, was constructed of birch brushwood very similar in character to that used in the Honeygore track nearby. It was probably collected at random in the local woodland, though the very narrow growth rings in many samples suggest an origin in rather unfavourable conditions.

The Honeypot track

This brushwood trackway, newly discovered nearby in 1985, was represented by only 5 hazel (Corylus) and 6 birch (Betula) stems (identified by A.E. Caseldine). The birch was around 35-55mm in diameter and 12-25 years old (Fig. 1 and Table 1), within the same range as that used in the Honeydew and Honeygore tracks.

The hazel stems, which were probably brought into

the Levels from higher ground, were 9-15 years old and 20-30mm in diameter, smaller than the birch.

The composition of this track thus differed in that hazel stems supplemented the birch brushwood; this may suggest an origin for the wood in more mixed woodland than that collected for the other trackways.

The Honeybee track

Between the Honeygore and Honeycat tracks, a new and unusual structure was found in 1983 (Coles et al 1985). It consisted of three panels of hurdling, two truncated and one complete. Hurdle A to the east, of 10 rods and one sail, was hardly woven and very scattered. Hurdle B was 1.3 x 0.5m, with about 60 rods woven around 3 sails. The weave appeared to be straightforward alternate over-and-under. Hurdle C was incomplete but consisted of about 50 evenly woven rods around 3 sails, probably of similar character to Hurdle B.

Radiocarbon dates in the range 2300-2600 bc (Coles et al 1985 58) indicated the Neolithic character of the hurdling.

The three hurdles were made entirely of hazel (Corylus), of which 97 samples were examined. There was in addition one piece of birch (Betula) lying between Hurdles A and B, which was 55mm in diameter. Age and size data for the 97 hazel stems are given in Table 2 and illustrated in Figs. 3 to 5. All the stems were less than 35mm in diameter; almost all lay between 5 and 20mm, averaging 14.2mm, as is shown in Fig. 3. The age too was very consistent, with the majority of stems being 2-4 years old, up to a maximum of 18 years. The range is shown in Fig. 4 right.

The rods and sails of each individual hurdle were

considered separately. The sails were more variable in age and size than the rods, although not much larger, as illustrated in Fig. 5. The rods of Hurdle A were very large and variable, compared to Hurdles B and C, and since Hurdle A was suspected not to be a hurdle in the usual sense, the rods may be uncharacteristic. The wide scatter may confirm that it was not a hurdle, but perhaps a bundle of stems intended for use as sails. The rods of Hurdles B and C were very consistent, in the 2-4 year age range and averaging about 12mm in diameter (Fig. 5; Table 2). They were probably the stems cut from stools growing on higher ground in the area, which had been cleared 2-4 years previously, either for cultivation or as a deliberately produced coppice crop.

About one third of the stems suggested winter cutting by their wide outermost growth rings. However, some also had narrow outermost rings and may have been cut in summer. A total of 22 stems had narrow innermost rings, usually followed by a wide second ring; it has been suggested (Rackham 1977) that this results from previous summer cutting. There may be evidence here of haphazard cutting when stems were required, rather than regular clear-felling.

The Honeybee hurdle data can be compared with figures from other hurdle tracks. Five structures in the Somerset Levels have now been the subject of tree-ring analysis, and the age and size data from each are summarised in Table 3. The Honeybee hazel proved to be the smallest and youngest assemblage; generally rods of 5-8 years growth and around 16-18mm in diameter were used for hurdle construction, while the sails were usually 8-11 years old and often over 20mm in diameter. Thus the Honeybee hurdles were unusual in being woven of much finer rods, to create a delicate panel; this may suggest that they had been made with some other purpose in mind.

Conclusions

The birch brushwood used in the Honeygore, Honeydew and Honeypot trackways was wide-ranging in both size and age, and was probably collected at random from nearby woodland. The absence of other species suggests that this was purely birch woodland, although some hazel in the Honeypot track may indicate a source on higher ground. The Honeycat track, by contrast, contained birch wood of much more uniform size and age - stems 20-25mm in diameter were preferred. The slightly later date of this track and the apparent selection of material may suggest that the birch woodland had been cut over previously, perhaps to provide material for the earlier birch brushwood tracks, and that this had led to a certain degree of uniformity.

The Honeybee hurdles were made of hazel stems of very consistent age and size, 2-4 years and 10-15mm, which suggests that they originated in previously cropped woodland. They were the smallest and youngest assemblage of stems yet found in hurdles in the Somerset Levels, and created a very delicate panel.

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TABLE 1 Details of the birch wood samples from the four brushwood tracks in the Honeygore area. Averages are not given where few samples were available; generally ages are approximate.

| TRACK | NUMBER OF SAMPLES | AGE | | DIAMETER mm | |
|-----------|-------------------|---------|--------|-------------|--------|
| | | Average | Range | Average | Range |
| HONEYGORE | 23 | - | c6-36 | 58 | 9-102 |
| HONEYCAT | 56 | 8 | 4-17 | 24 | 8-53 |
| HONEYDEW | 24 | c19 | c12-30 | 31 | 12-120 |
| HONEYPOT | 6 | - | c12-25 | - | 33-54 |

TABLE 2 Details of the hazel rods and sails in the Honeybee hurdles.

| ORIGIN | NUMBER OF SAMPLES | AGE | | DIAMETER mm | |
|----------|-------------------|---------|--------|-------------|---------|
| | | Average | Range | Average | Range |
| SAILS | 9 | 6.2 | 4 - 11 | 18.4 | 13 - 27 |
| RODS | | | | | |
| Hurdle A | 10 | 8 | 3 - 18 | 23.3 | 16 - 35 |
| Hurdle B | 63 | 3.5 | 2 - 10 | 12.8 | 6 - 20 |
| Hurdle C | 15 | 3.1 | 2 - 4 | 11.7 | 8 - 15 |

TABLE 3 Details of the age and size of hazel rods and sails from five hurdle trackways in the Somerset Levels, in chronological order.

| TRACKWAY | RODS | | | SAILS | | |
|-------------------------|--------------|-------------|------------------|--------------|-------------|------------------|
| | No. of stems | Average age | Average diameter | No. of stems | Average age | Average diameter |
| HONEYBEE ¹ | 88 | 3.9 | 13.8 | 9 | 6.2 | 18.4 |
| WALTON '83 ² | 21 | 6.2 | 18.6 | 3 | 9.3 | 14.3 |
| ROWLAND 'S ³ | 67 | 5.0 | 16.0 | 28 | 8.7 | 24.0 |
| EAST MOORS ⁴ | 48 | 6.2 | 17.9 | 7 | 7.9 | 19.9 |
| ECLIPSE ⁵ | 110 | 8.0 | 16.9 | 17 | 11.1 | 31.3 |

1 Coles *et al* 1985

2 Orme *et al* 1985

3 Morgan 1977

4 Orme, Sturdy & Morgan 1980

5 Coles, Caseldine & Morgan 1982

Fig. 1 Scatter diagrams showing the range in age and size of birch (Betula) stems from four brushwood trackways in the Honeygore area.

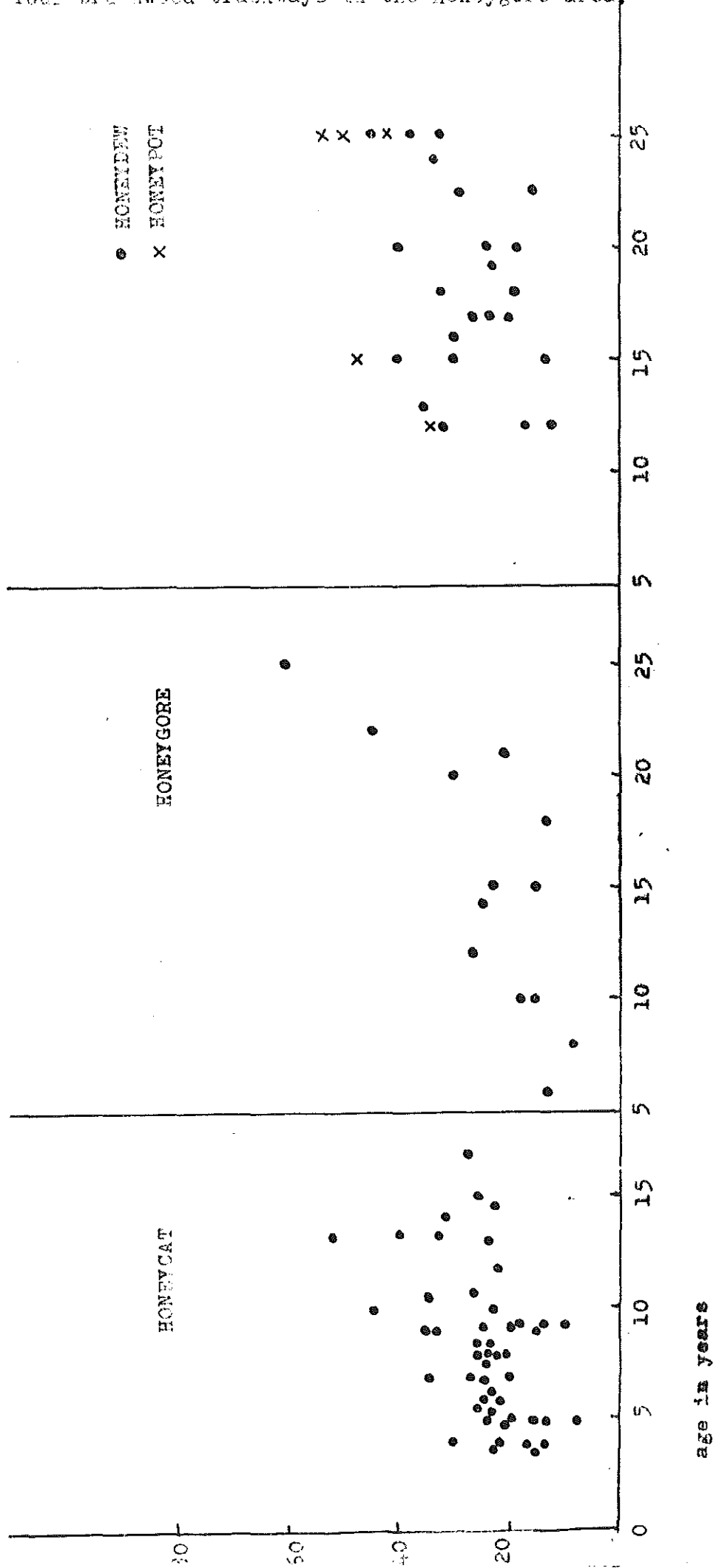


Fig. 2 Histograms showing the range in size of birch stems from the Honeygore, Honeycat and Honeydew tracks.

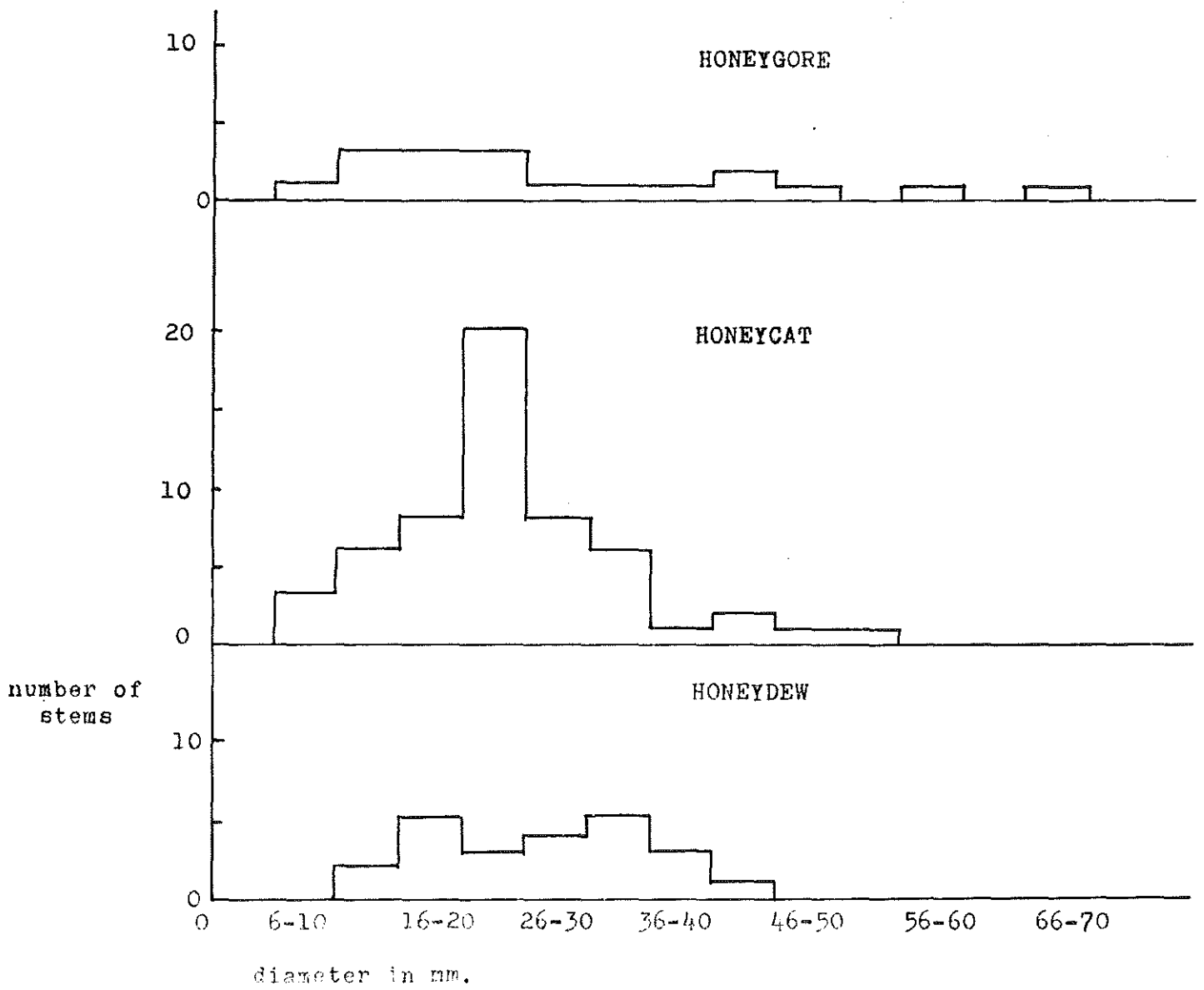


Fig. 3 Histogram showing the size range of the hazel stems used in the Honeybee hurdles.

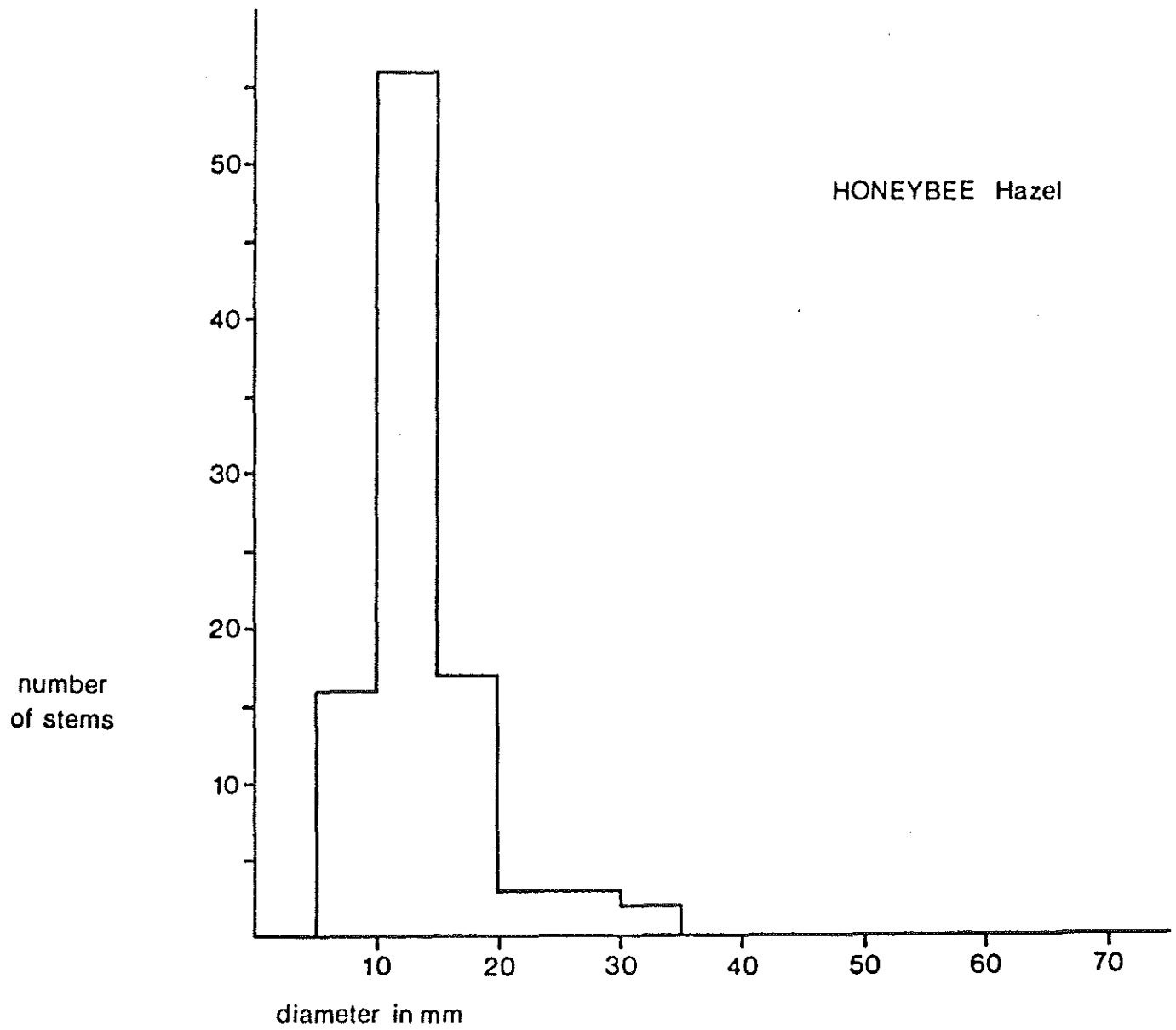


Fig. 4 Age range of the hazel stems from the Honeybee hurdles

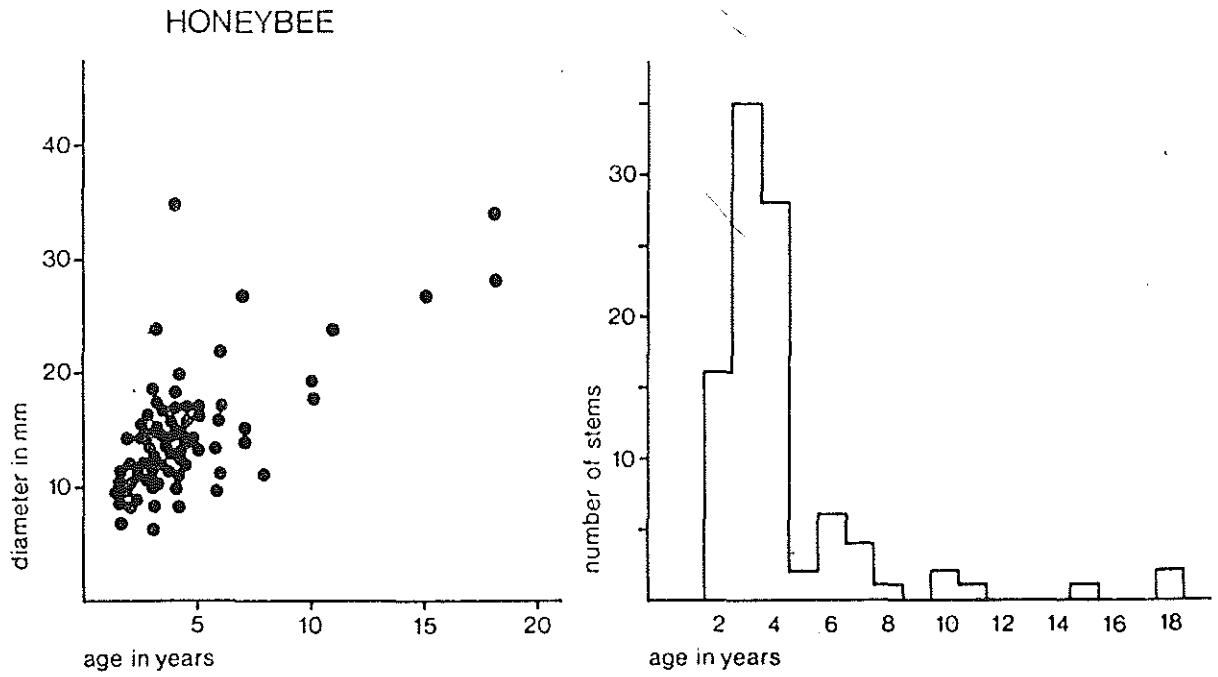


Fig. 5 Scatter diagrams showing the age/size relationship of hazel stems used as rods in each of the three hurdles and as sails.

