

6 ANALYSIS OF THE MESOFAUNA

6.1 GENERAL

The total arthropod mesofauna recovered from the samples were studied and identified to specific level where possible. In soil ecological work, it is extremely difficult to attain the same degree of identification with all the mesofaunal groups encountered. In an attempt to attain the best results work has been done in close co-operation with various taxonomists, yet, as Kühnelt (1961) has pointed out, ecologists have difficulty to get all the identifications correct to generic or even family level.

The Acari is considered a subclass of the Arachnida. In this work, the term Oribatei will be regarded as being synonymous with the term Cryptostigmata, and Acaridiae as synonymous with Astigmata. The term "Other Arthropoda" and consisted mainly of the class Insecta.

Numbers of animals alone do not reveal the complete picture of the organism in its habitat. To provide a better conception, investigators tend to correlate other properties with the numerical value, such as biomass values and energy consumption. The results of this investigation with regard to the organisms will be interpreted as:

- 1 Numbers per sample
- 2 Biomass per sample
- 3 Percentages of numbers and biomass
- 4 Numbers per m²

- 5 Numbers per cm³
- 6 Biomass per cm³
- 7 Ratios

6.2 THE MESOFAUNA

To form a general impression as to the numbers and nature of the faunal composition of the experimental plots (tables 13 and 14), a three dimensional histogram has been made (fig. g).

Plot E had the highest mesofaunal number of 2534 individuals for the four samples, as a result of extraordinary high Collembola populations in January 1966. The numbers of the Acari and "Other Arthropoda", on the other hand, were rather low. Plot A, with 2289 arthropods, had the second highest figure.

Plot B was the plot with the second highest mite population and also third in the population, total numbers rating with 1907 arthropods.

The plot with the fourth most numbers was plot D, with its 1786 arthropods, and lastly came plot C with 1119 individuals.

However, taking biomass into account, plot A was the most important with a biomass of 0.1315975 gramme, followed by plot E with 0.0734070 gramme, plot D with 0.0402195 gramme, plot B with 0.0328250 gramme and plot C with 0.0316065 gramme.

For an initial orientation concerning the mesofauna, it has been divided into three groups, namely the Acari, Collembola and "Other Arthropoda" (excluding Collembola).

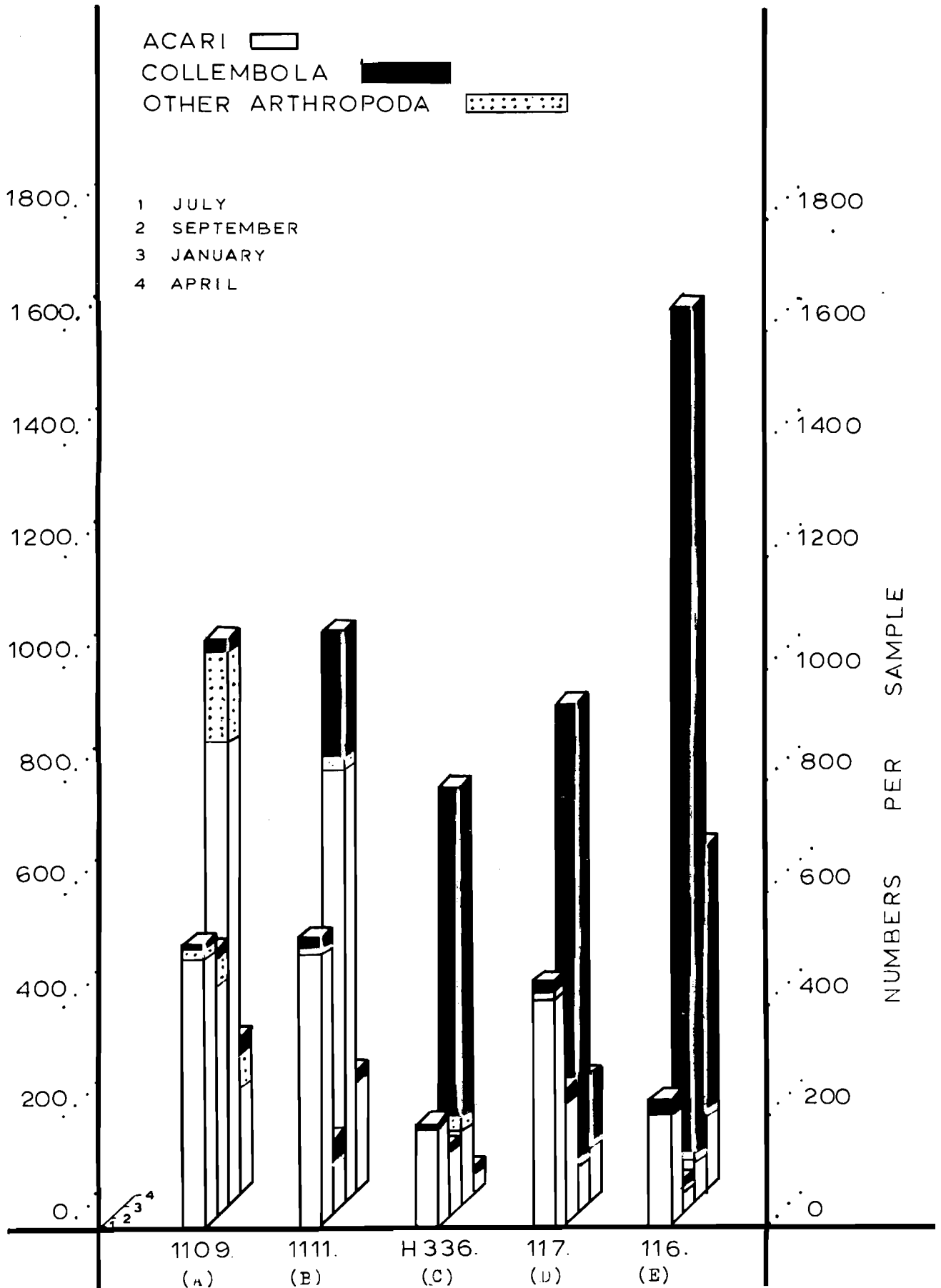


Fig. 8 Numbers of the main groups of the soil mesofauna in plots A - E.

6.21 Acari

From the results (fig. 9, table 13), it is evident that plot A had the highest Acari total. The 1915 mites represented 83.661% of the year's mesofaunal recovering. On the other hand, the biomass of this division was very small, contributing only 10.719% of the overall biomass presentation, mainly because so many "Other Arthropoda" with their relatively higher biomass values per individual, were present.

Plot B, had the second highest Acari population, with a total of 1581 mites, which represented 82.904% of the numbers.

TABLE 13 Numbers of the main groups of the soil mesofauna
in plots A - E

| | <u>Numb.</u> | <u>Numb. %</u> | <u>Biom.</u> | <u>Biom.%</u> | <u>Numb./m²</u> |
|-----------------------|--------------|----------------|--------------|---------------|----------------------------|
| <u>Plot A</u> | | | | | |
| <u>July 1965</u> | | | | | |
| Acari | 472 | 20.621 | 0.0020630 | 1.568 | 27,902.561 |
| Collembola | 6 | .262 | 0.0002100 | .160 | 354.694 |
| "Other Arthropoda" | 29 | 1.266 | 0.0094000 | 7.142 | 1,714.353 |
| <u>September 1965</u> | | | | | |
| Acari | 416 | 18.174 | 0.0032715 | 2.486 | 24,592.090 |
| Collembola | 13 | .568 | 0.0004100 | .311 | 768.504 |
| "Other Arthropoda" | 53 | 2.315 | 0.0233560 | 17.749 | 3,133.125 |
| <u>January 1966</u> | | | | | |
| Acari | 830 | 36.260 | 0.0060800 | 4.620 | 49,065.949 |
| Collembola | 24 | 1.049 | 0.0006580 | .500 | 1,418.773 |
| "Other Arthropoda" | 163 | 7.121 | 0.0587800 | 44.667 | 9,635.843 |
| <u>April 1966</u> | | | | | |
| Acari | 197 | 8.606 | 0.0026930 | 2.046 | 11,645.774 |
| Collembola | 28 | 1.223 | 0.0004600 | .349 | 1,655.237 |
| "Other Arthropoda" | 58 | 2.534 | 0.0242160 | 18.402 | 3,428.702 |

| (table 13 continued) | Numb. | Numb. % | Biom. | Biom. % | Numb./m ² |
|-----------------------|-------|---------|-----------|---------|----------------------|
| <u>Total</u> | | | | | |
| Acari | 1915 | 83.661 | 0.0141075 | 10.719 | |
| Collembola | 71 | 3.102 | 0.0017380 | 1.321 | |
| "Other Arthropoda" | 303 | 13.237 | 0.1157520 | 87.959 | |
| <u>Plot B</u> | | | | | |
| <u>July 1965</u> | | | | | |
| Acari | 498 | 26.114 | 0.0016320 | 4.971 | 29,439.568 |
| Collembola | 22 | 1.154 | 0.0007100 | 2.163 | 1,300.542 |
| "Other Arthropoda" | 3 | .157 | 0.0008150 | 2.483 | 177.348 |
| <u>September 1965</u> | | | | | |
| Acari | 96 | 5.033 | 0.0009725 | 2.961 | 5,675.097 |
| Collembola | 33 | 1.731 | 0.0007500 | 2.285 | 1,950.815 |
| "Other Arthropoda" | 5 | .263 | 0.0012130 | 3.696 | 295.578 |
| <u>January 1966</u> | | | | | |
| Acari | 780 | 40.902 | 0.0068715 | 20.934 | 46,110.167 |
| Collembola | 230 | 12.061 | 0.0080250 | 24.448 | 13,596.588 |
| "Other Arthropoda" | 21 | 1.101 | 0.0068550 | 20.883 | 1,241.428 |
| <u>April 1966</u> | | | | | |
| Acari | 207 | 10.855 | 0.0039110 | 11.914 | 12,236.929 |
| Collembola | 9 | .472 | 0.0002400 | .732 | 532.040 |
| "Other Arthropoda" | 3 | .157 | 0.0008300 | 2.529 | 177.347 |
| <u>Total</u> | | | | | |
| Acari | 1581 | 82.904 | 0.0133870 | 40.783 | |
| Collembola | 294 | 15.418 | 0.0097250 | 29.627 | |
| "Other Arthropoda" | 32 | 1.677 | 0.0097130 | 29.590 | |
| <u>Plot C</u> | | | | | |
| <u>July 1965</u> | | | | | |
| Acari | 178 | 15.807 | 0.0009915 | 3.136 | 10,522.576 |
| Collembola | 2 | .179 | 0.0000400 | .127 | 118.231 |
| "Other Arthropoda" | 5 | .446 | 0.0009970 | 3.154 | 295.579 |
| <u>September 1965</u> | | | | | |
| Acari | 122 | 10.903 | 0.0017760 | 5.619 | 7,212.102 |
| Collembola | 3 | .268 | 0.0001050 | .332 | 177.347 |
| "Other Arthropoda" | 3 | .268 | 0.0001380 | .437 | 177.347 |

(table 13 continued)

| | Numb. | Numb. % | Biom. | Biom. % | Numb./m ² |
|-----------------------|-------|---------|-----------|---------|----------------------|
| <u>January 1966</u> | | | | | |
| Acari | 135 | 12.064 | 0.0007800 | 2.466 | 7,980.606 |
| Collembola | 583 | 52.100 | 0.0196250 | 62.091 | 34,464.394 |
| "Other Arthropoda" | 33 | 2.949 | 0.0058700 | 18.574 | 1,950.815 |
| <u>April 1966</u> | | | | | |
| Acari | 41 | 3.764 | 0.0002240 | .709 | 2,423.740 |
| Collembola | 11 | .983 | 0.0002650 | .838 | 650.271 |
| "Other Arthropoda" | 3 | .268 | 0.0007950 | 2.516 | 177.347 |
| <u>Total</u> | | | | | |
| Acari | 476 | 42.538 | 0.0037715 | 11.932 | |
| Collembola | 599 | 53.530 | 0.0097250 | 63.389 | |
| "Other Arthropoda" | 44 | 3.932 | 0.0097130 | 24.678 | |
| <u>Plot D</u> | | | | | |
| <u>July 1965</u> | | | | | |
| Acari | 413 | 23.124 | 0.0015110 | 3.757 | 24,414.742 |
| Collembola | 18 | 1.008 | 0.0006300 | 1.566 | 1,064.080 |
| "Other Arthropoda" | 12 | .672 | 0.0009180 | 2.283 | 709.388 |
| <u>September 1965</u> | | | | | |
| Acari | 206 | 11.534 | 0.0016576 | 4.121 | 12,177.813 |
| Collembola | 20 | 1.120 | 0.0005950 | 1.479 | 1,182.311 |
| "Other Arthropoda" | 4 | .224 | 0.0008300 | 2.064 | 236.462 |
| <u>Januarie 1966</u> | | | | | |
| Acari | 88 | 4.928 | 0.0006860 | 1.706 | 5,202.171 |
| Collembola | 800 | 44.792 | 0.0256450 | 63.762 | 47,292.478 |
| "Other Arthropoda" | 9 | .504 | 0.0009950 | 2.474 | 532.042 |
| <u>April 1966</u> | | | | | |
| Acari | 107 | 5.991 | 0.0012970 | 3.473 | 8,453.529 |
| Collembola | 105 | 5.879 | 0.0029550 | 7.347 | 6,207.136 |
| "Other Arthropoda" | 4 | .224 | 0.0024000 | 5.967 | 236.462 |
| <u>Total</u> | | | | | |
| Acari | 814 | 45.476 | 0.0052515 | 13.057 | |
| Collembola | 943 | 52.799 | 0.0298250 | 74.154 | |
| "Other Arthropoda" | 29 | 1.624 | 0.0051430 | 12.787 | |

(table 13 continued)

| | <u>Numb.</u> | <u>Numb. %</u> | <u>Biom.</u> | <u>Biom.%</u> | <u>Numb./m²</u> |
|-----------------------|--------------|----------------|--------------|---------------|----------------------------|
| <u>Plot E</u> | | | | | |
| <u>July 1965</u> | | | | | |
| Acari | 205 | 8.088 | 0.0006815 | .888 | 12,118.697 |
| Collembola | 29 | 1.146 | 0.0009700 | 1.264 | 1,714.352 |
| "Other Arthropoda" | 1 | .039 | 0.0000150 | .020 | 59.116 |
| <u>September 1965</u> | | | | | |
| Acari | 49 | 1.935 | 0.0002150 | .280 | 2,896.663 |
| Collembola | 9 | .316 | 0.0002390 | .306 | 532.041 |
| "Other Arthropoda" | 6 | .274 | 0.0012650 | 1.654 | 354.694 |
| <u>January 1966</u> | | | | | |
| Acari | 88 | 3.473 | 0.0005000 | .652 | 5,202.173 |
| Collembola | 1513 | 59.708 | 0.0526250 | 68.577 | 89,441.902 |
| "Other Arthropoda" | 7 | .276 | 0.0005200 | 1.981 | 413.809 |
| <u>April 1966</u> | | | | | |
| Acari | 149 | 5.882 | 0.0019345 | 2.520 | 8,808.223 |
| Collembola | 474 | 18.706 | 0.0159350 | 20.766 | 28,020.793 |
| "Other Arthropoda" | 4 | .156 | 0.0008380 | 1.091 | 236.464 |
| <u>Total</u> | | | | | |
| Acari | 491 | 19.377 | 0.0033310 | 4.340 | |
| Collembola | 2025 | 79.913 | 0.0697650 | 90.918 | |
| "Other Arthropoda" | 18 | .710 | 0.0036420 | 4.741 | |

TABLE 14 Numbers and biomass values of the mesofauna in plotsA - E

| | <u>Numbers</u> | <u>Biomass</u> | <u>Numbers/m²</u> |
|----------------------|----------------|----------------|------------------------------|
| <u>Plot 1109 (A)</u> | | | |
| July 1965 | 507 | 0.0116730 | 29,973.840 |
| September 1965 | 482 | 0.0270375 | 28,495.840 |
| January 1966 | 1017 | 0.0655180 | 60,125.040 |
| April 1966 | 283 | 0.0273690 | 16,730.960 |

(table 14 continued)

| | <u>Numbers</u> | <u>Biomass</u> | <u>Numbers/m²</u> |
|----------------------|----------------|----------------|------------------------------|
| <u>Plot 1111(B)</u> | | | |
| July 1965 | 523 | 0.0031570 | 30,919.760 |
| September 1965 | 134 | 0.0029355 | 7,922.080 |
| January 1966 | 1031 | 0.0217515 | 60,952.720 |
| April 1966 | 219 | 0.0049810 | 12,947.280 |
| <u>Plot H 336(C)</u> | | | |
| July 1965 | 185 | 0.0020285 | 10,937.200 |
| September 1965 | 128 | 0.0020190 | 7,567.360 |
| January 1966 | 751 | 0.0262750 | 44,399.120 |
| April 1966 | 55 | 0.0012840 | 3,251.600 |
| <u>Plot 117 (D)</u> | | | |
| July 1965 | 443 | 0.0030590 | 26,190.160 |
| September 1965 | 230 | 0.0030825 | 13,597.600 |
| January 1966 | 897 | 0.0273260 | 53,030.640 |
| April 1966 | 216 | 0.0067520 | 12,769.920 |
| <u>Plot 116 (E)</u> | | | |
| July 1965 | 235 | 0.0016665 | 13,893.200 |
| September 1965 | 64 | 0.0017190 | 3,783.680 |
| January 1966 | 1608 | 0.0546450 | 95,064.960 |
| April 1966 | 627 | 0.0187075 | 28,259.360 |

The biomass, on the other hand, represented 40.783% of the total biomass recovering.

The Acari populations of the other three plots, C, D and E were relatively low, in comparison with that of the two described plots, constituting 42.538%, 45.576% and 19.377% of the numbers respectively.

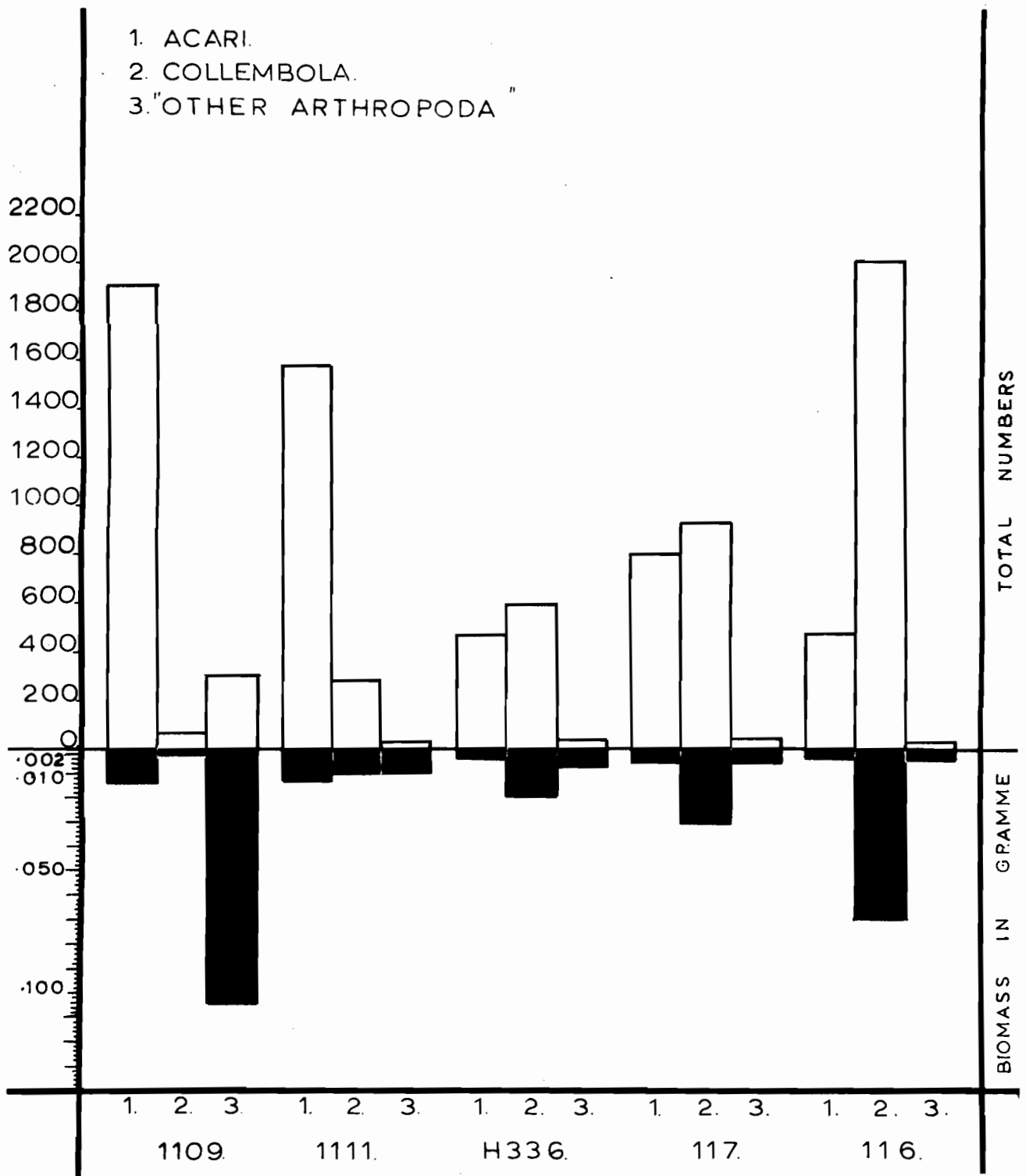


Fig. 9 Numbers of the Acari, Collembola and 'Other Arthropoda'.

6.22 Collembola

From the graphs in figure 9, it is evident that there was a marked difference in the size and nature of the collembolan fauna of the different plots.

The Collembola from plot A represented only 3.102% of the mesofaunal numbers in comparison with the 79.913% registered for plot E. As depicted in table 13, all the citrus plots experienced a sudden upsurge of collembolan numbers during January 1966, with a gradual decline towards April the same year. The Collembolan numbers and biomass percentages recorded for the five plots were:

| | <u>Numbers %</u> | <u>Biomass %</u> |
|--------|------------------|------------------|
| Plot A | 3.102 | 1.321 |
| Plot B | 15.418 | 29.672 |
| Plot C | 53.530 | 63.389 |
| Plot D | 52.799 | 74.154 |
| Plot E | 79.913 | 90.918 |

6.23 "Other Arthropoda"

In this division, plot A had, by far, the most animals. "Other Arthropods" constituted only 13.237% of this particular plot's numbers, but in relation to biomass, it was the most important group, comprising 87.959% of the total biomass.

The "Other Arthropoda" of plots no. B, C, D and E were all on the same level with 1.677%, 3.932%, 1.624% and .710%

respectively in relation to numbers. The biomass values for the four plots were 29.590%, 24.678%, 12.787% and 4.741% respectively.

6.3 ANALYSIS OF THE ACARI

The population densities of the Trombidiformes, Mesostigmata, Oribatei and Acaridiae are graphically represented in figure 10, and the corresponding data were given in tables 15 to 19. The Trombidiformes in general, made the biggest contribution to the acarofauna of all five plots, and had a fair biomass representation. The Oribatei was the second largest numerical contributor, and except for plot A, the largest biomass contributor of the Acari. Mesostigmata and Acaridiae were less abundant.

6.31 Trombidiformes

The Trombidiformes was numerically, by far, the largest single contributor to the Acari, but the biomass were proportionally smaller because of domination by smaller mites.

Within the Trombidiformes, representatives of 19 families were recorded (tabel 20). The control plot had representatives of 17 families, which formed a total of 1635 trombidiform mites, that was equal to 71.428% of its total mesofaunal numbers, but only 6.671% of its total biomass. The old citrus plot, represented Trombidiformes by 10 families, which formed the total mesofaunal number of 1041 mites, that was equal to 54.558% of

- 1. TROMBIDIFORMES
- 2. MESOSTIGMATA
- 3. ACARIDIAE
- 4. ORIBATEI

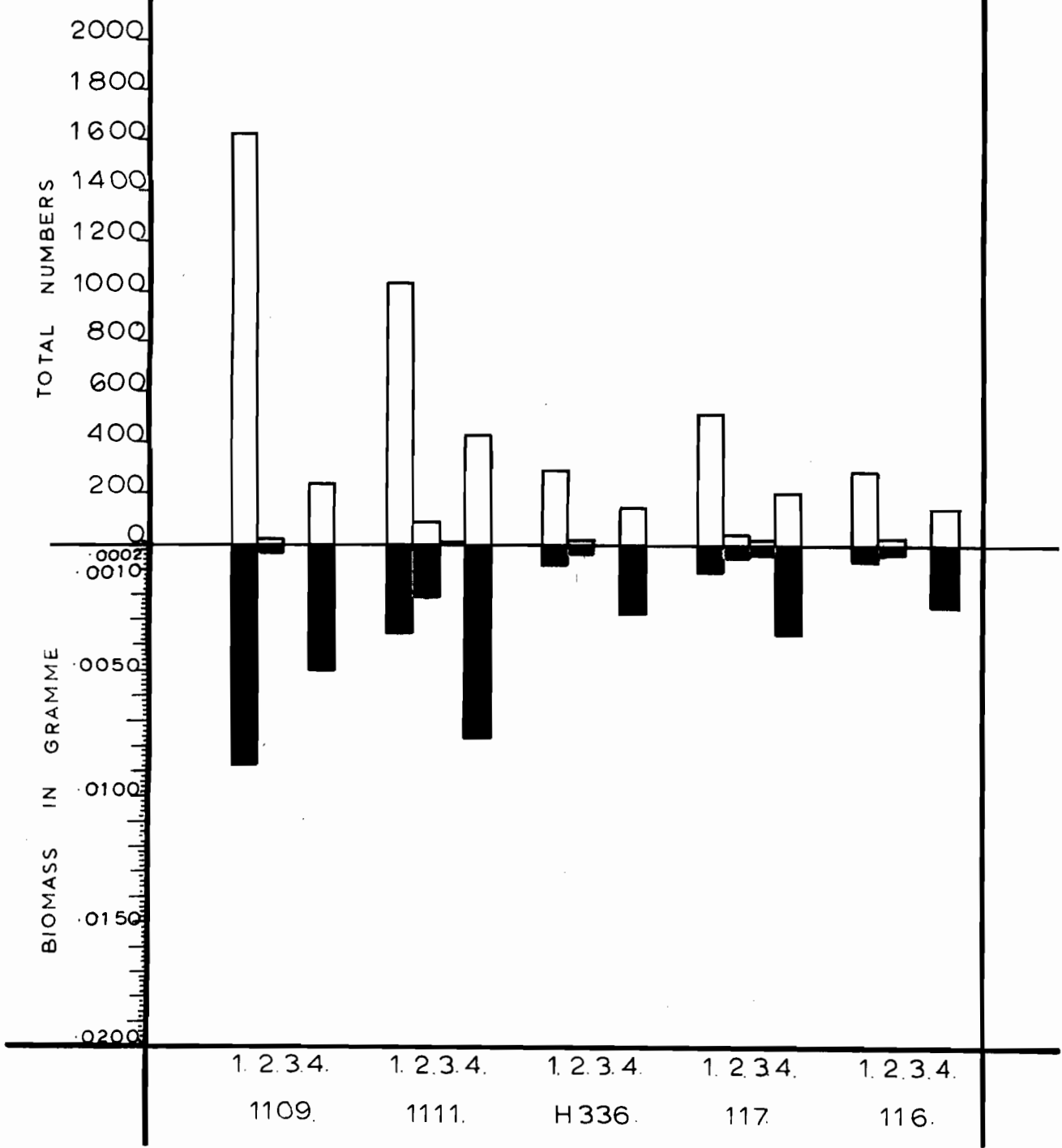


Fig. 10 Numbers of the Acari orders.

PLOT No. 1109

TABLE 15 NUMBERS AND BIOMASS VALUES OF MICROARTHROPODS FOR PLOT A

| | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|---|-------|---------|---------|-----------|---------|---------|----------------|---------|---------|--------------|---------|---------|------------|---------|---------|
| | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % |
| ACARI | | | | | | | | | | | | | | | |
| TROMBIDIFORMES | | | | | | | | | | | | | | | |
| Tydeidae : Tydeus sp. | 437 | 19.091 | .491 | 292 | 12.757 | .333 | 42 | 1.835 | .048 | 82 | 3.582 | .093 | 21 | .917 | .024 |
| Microtydeus sp. | 172 | 7.514 | .262 | 2 | .087 | .003 | 44 | 1.922 | .067 | 120 | 5.242 | .182 | 6 | .262 | .009 |
| Lorryia sp. | 36 | 1.573 | .369 | 2 | .087 | .021 | 12 | .524 | .123 | 12 | .524 | .123 | 10 | .437 | .103 |
| Paralorryia sp. | 6 | .262 | .062 | | | | 3 | .131 | .031 | | | | 3 | .131 | .031 |
| Nanorchestidae : Speleorchestes sp. | 635 | 27.741 | .965 | 36 | 1.573 | .055 | 189 | 8.257 | .287 | 367 | 16.033 | .558 | 43 | 1.878 | .065 |
| Cunaxidae : Cunaxa sp. | 99 | 4.325 | 1.053 | 3 | .131 | .032 | 4 | .175 | .043 | 87 | 3.801 | .926 | 5 | .219 | .053 |
| Mdellidae : Mdella sp. | 76 | 3.320 | .809 | 5 | .219 | .053 | 12 | .524 | .128 | 40 | 1.747 | .426 | 19 | .830 | .202 |
| Zyta sp. | 3 | .131 | .032 | | | | | | | 3 | .131 | .032 | | | |
| Raphignathidae : Acheles sp. | 41 | 1.791 | .561 | 1 | .043 | .014 | 2 | .087 | .027 | 35 | 1.529 | .479 | 3 | .131 | .041 |
| Stigmaeidae : Ledermulleria sp. | 6 | .262 | .073 | | | | 4 | .175 | .045 | 2 | .087 | .024 | | | |
| Ledermulleria sp. | 6 | .262 | .073 | 2 | .087 | .024 | 4 | .175 | .045 | | | | | | |
| Neophyllobius sp. nov. | 2 | .087 | .030 | | | | | | | 1 | .044 | .015 | 1 | .044 | .015 |
| Lordalychidae : Lordalychus sp. | 2 | .088 | .003 | 1 | .044 | .001 | 1 | .044 | .002 | | | | | | |
| Pseudocheyleidae : Pseudocheylus sp. | 12 | .524 | .137 | 7 | .306 | .080 | 1 | .044 | .011 | 1 | .044 | .011 | 3 | .131 | .034 |
| Cheyletidae : Paracheyletia sp. | 6 | .262 | .009 | 1 | .044 | .002 | 5 | .219 | .007 | | | | | | |
| Erythraeidae : Smaris sp. | 43 | 1.879 | 1.307 | | | | 5 | .219 | .152 | 24 | 1.048 | .729 | 14 | .612 | .471 |
| Leptus sp. | 3 | .131 | .091 | | | | | | | | | | 3 | .131 | .046 |
| Pyemotidae : Pygmephorus sp. | 15 | .668 | .049 | 10 | .437 | .038 | | | | 1 | .044 | .014 | 3 | .131 | .008 |
| Parsonemidae : Parsonemus sp. | 12 | .524 | .018 | | | | | | | | | | 12 | .524 | .018 |
| Scutacaridae : Scutacarus sp. | 4 | .175 | .006 | | | | | | | | | | 4 | .175 | .006 |
| Eupodidae : Eupodes sp. | 3 | .131 | .032 | | | | 1 | .044 | .011 | 1 | .044 | .011 | 1 | .044 | .011 |
| Anyetidae : Anyetes sp. | 5 | .219 | .076 | 4 | .175 | .061 | | | | 1 | .044 | .015 | | | |
| Cryptognathidae : Cryptognathus sp. | 3 | .131 | .034 | | | | 3 | .131 | .034 | | | | | | |
| Pachygnathidae : Bimichealia sp. | 6 | .262 | .073 | 3 | .131 | .036 | 2 | .087 | .024 | | | | 1 | .044 | .012 |
| Pachygnathus sp. | 4 | .175 | .049 | 2 | .087 | .024 | 1 | .043 | .012 | 1 | .044 | .012 | | | |
| Paratydeidae : Scolotydeus sp. | | | | | | | | | | | | | | | |
| | 1635 | 71.428 | 6.671 | 371 | 16.208 | .777 | 335 | 14.634 | 1.105 | 778 | 33.988 | 3.640 | 151 | 6.597 | 1.149 |
| MESOSTIGMATA | | | | | | | | | | | | | | | |
| Rhodacidae : Rhodacarus sp. | 10 | .437 | .015 | 1 | .044 | .001 | 8 | .349 | .012 | | | | 1 | .044 | .002 |
| Digamasellidae : Digamasellus sp. | 2 | .088 | .027 | | | | | | | | | | 2 | .088 | .027 |
| Laelaptidae : Geolaelaps sp. | 2 | .087 | .030 | | | | | | | | | | 2 | .087 | .030 |
| Hypoaspis sp. | 5 | .218 | .076 | | | | 3 | .131 | .045 | | | | 2 | .087 | .031 |
| Phytoseiidae : Amblyseius sp. | 1 | .044 | .015 | | | | | | | | | | 1 | .044 | .015 |
| Ascidae : Protogamasellus sp. | 5 | .218 | .008 | | | | | | | 1 | .044 | .002 | 4 | .175 | .006 |
| Gamasellodes sp. | 2 | .088 | .027 | | | | | | | | | | 2 | .087 | .027 |
| | 26 | 1.136 | .185 | 1 | .044 | .001 | 12 | .524 | .071 | 1 | .044 | .002 | 12 | .524 | .111 |
| ACARIDIAE | | | | | | | | | | | | | | | |
| Acaridae : Tyrophagus sp. | 7 | .306 | .065 | | | | 1 | .044 | .011 | 4 | .175 | .043 | 2 | .087 | .012 |
| CRIBATEI | | | | | | | | | | | | | | | |
| Oribatulidae : Scheloribatona sp. | 56 | 2.446 | .787 | 7 | .306 | .102 | 37 | 1.616 | .517 | 3 | .131 | .042 | 9 | .393 | .126 |
| Liodes sp. A | 23 | 1.005 | .262 | 14 | .612 | .150 | 5 | .219 | .056 | 3 | .131 | .034 | 1 | .044 | .011 |
| Plateremaeidae : Plateremaeus sp. | 45 | 1.966 | 1.710 | | | | 14 | .612 | .532 | 13 | .593 | .722 | 12 | .524 | .456 |
| Pedrocorticalla sp. | 27 | 1.180 | .308 | 17 | .733 | .194 | 10 | .437 | .114 | | | | | | |
| Passalozetidae : Passalozetes sp. | 54 | 2.359 | .205 | 48 | 2.097 | .192 | | | | 5 | .219 | .019 | 1 | .044 | .004 |
| Euphthiracaridae : Rhyzotritia sp. | 3 | .131 | .228 | | | | 1 | .044 | .076 | | | | 2 | .087 | .152 |
| Cosmochthoniidae : Cosmochthonius sp. | 12 | .524 | .045 | 1 | .043 | .004 | 1 | .044 | .004 | 10 | .437 | .038 | | | |
| Perlichmanniidae sp. | 21 | .918 | .239 | 13 | .565 | .148 | | | | 7 | .306 | .080 | 1 | .044 | .011 |
| Larvae unknown | 6 | .262 | .014 | | | | | | | | | | 6 | .262 | .014 |
| | 247 | 10.791 | 3.798 | 100 | 4.369 | .790 | 68 | 2.972 | 1.299 | 47 | 2.053 | .935 | 32 | 1.398 | .774 |
| INSECTA | | | | | | | | | | | | | | | |
| COLLEMBOLA | | | | | | | | | | | | | | | |
| Onychiuridae : Onychiurus sp. | 26 | 1.136 | | | | | 3 | .131 | .045 | 2 | .087 | .030 | 21 | .917 | .319 |
| Isotomidae : Isotomina sp. | 30 | 1.311 | .798 | 6 | .262 | .150 | 10 | .437 | .265 | 14 | .612 | .372 | | | |
| Entomobryidae : Seira sp. | 5 | .218 | .061 | | | | | | | 4 | .175 | .049 | 1 | .044 | .012 |
| Entomobrya sp. | 4 | .175 | .049 | | | | | | | 4 | .175 | .049 | | | |
| Sminthuridae : Sminthurus sp. | 5 | .262 | | | | | | | | | | | 6 | .262 | .018 |
| | 13 | .568 | .938 | | | | | | | 10 | .437 | .760 | 3 | .131 | .228 |
| DIPLURA | | | | | | | | | | | | | | | |
| Japygidae : Japyx sp. | 13 | .568 | .938 | | | | | | | | | | | | |
| CORRODENTIA | | | | | | | | | | | | | | | |
| Liposcellidae sp. | 83 | 3.626 | 1.261 | 6 | .262 | .091 | 9 | .393 | .137 | 64 | 2.795 | .973 | 4 | .175 | .061 |
| HEMIPTERA | | | | | | | | | | | | | | | |
| Psocoptidae sp. | 2 | .087 | .608 | | | | | | | | | | 2 | .087 | .608 |
| HOMOPTERA | | | | | | | | | | | | | | | |
| Coccidae sp. | 4 | .175 | .045 | | | | | | | | | | 4 | .175 | .045 |
| THYSANOPTERA | | | | | | | | | | | | | | | |
| Phlaeothripidae : Urothrips sp. | 20 | .873 | 6.079 | 5 | .218 | 1.520 | | | | 12 | .524 | 3.647 | 3 | .131 | .912 |
| Faureothrips sp. | 1 | .044 | .304 | | | | 1 | .044 | .304 | | | | | | |
| | 5 | .218 | .912 | | | | 1 | .044 | .190 | 4 | .175 | .722 | | | |
| DIPTERA | | | | | | | | | | | | | | | |
| Cecidomyiidae sp. | 5 | .218 | .912 | | | | | | | | | | | | |
| COLEOPTERA | | | | | | | | | | | | | | | |
| Tenebrionidae sp. | 31 | 1.354 | 4.423 | 10 | .437 | 1.459 | 8 | .349 | 1.094 | 2 | .087 | .273 | 11 | .481 | 1.596 |
| HYMENOPTERA | | | | | | | | | | | | | | | |
| Trichogrammatidae : Trichogramma sp. | 1 | .044 | .190 | | | | | | | 1 | .044 | .190 | | | |
| Femiciidae : Pheidole sp. | 8 | .349 | 3.647 | 4 | .175 | 1.824 | | | | | | | 4 | .175 | 1.824 |
| ARACHNIDA | | | | | | | | | | | | | | | |
| ARANEIDA | | | | | | | | | | | | | | | |
| Salticidae sp. | 2 | .088 | 1.216 | | | | | | | | | | 2 | .087 | 1.216 |
| Eresidae sp. | 2 | .088 | 1.216 | 2 | .087 | 1.215 | | | | | | | | | |
| DIPLOPODA | | | | | | | | | | | | | | | |
| SPIROSTREPTOMORPHA | | | | | | | | | | | | | | | |
| Spirostreptidae sp. | 124 | 5.417 | 64.074 | 2 | .087 | 1.033 | 31 | 1.354 | 16.019 | 68 | 2.971 | 35.138 | 23 | 1.005 | 11.885 |
| CHILGODA | | | | | | | | | | | | | | | |
| GEOPHILOMORPHA | | | | | | | | | | | | | | | |
| Geophilidae sp. | 2 | .087 | 2.964 | | | | | | | 2 | .087 | 2.964 | | | |
| PAUROPODA | | | | | | | | | | | | | | | |
| Pauropidae : Pauropus sp. | 2 | .088 | .027 | | | | | | | | | | 2 | .087 | .027 |
| TARDIGRADA | | | | | | | | | | | | | | | |
| EUTARDIGRADA | | | | | | | | | | | | | | | |
| Macrobiotidae sp. | 3 | .131 | .005 | | | | 3 | .131 | .005 | | | | | | |
| | 374 | 16.339 | 89.280 | 35 | 1.528 | 7.302 | 66 | 2.883 | 18.060 | 187 | 8.170 | 45.167 | 86 | 3.757 | 18.751 |
| | 2289 | 100.000 | 99.999 | 507 | 22.149 | 8.870 | 482 | 21.057 | 20.546 | 1017 | 44.430 | 49.787 | 283 | 12.363 | 20.797 |

TABLE 16 NUMBERS AND BIOMASS VALUES OF MICROARTHROPODS FOR PLOT B

| | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|---|---------------|----------------|--------------|---------------|--------------|------------|----------------|--------------|-------------|---------------|---------------|------------|---------------|---------------|--------------|
| | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % |
| ACARI | | | | | | | | | | | | | | | |
| TROMBIDIFORMES | | | | | | | | | | | | | | | |
| Tydeidae : Tydaeus sp. | 393 | 20.608 | 1.796 | 294 | 15.416 | 1.343 | 4 | .210 | .018 | 94 | 4.929 | .430 | 1 | .052 | .004 |
| Microtydeus sp. | 125 | 6.555 | .762 | 39 | 2.045 | .238 | 24 | 1.258 | .146 | 60 | 3.146 | .366 | 2 | .105 | .012 |
| Lorryia sp. | 7 | .367 | .288 | | | | 3 | .157 | .123 | 3 | .157 | .123 | 1 | .052 | .041 |
| Nanorcheatidae : Speleorchestes sp. | 48 | 2.517 | .293 | 44 | 2.307 | .268 | | | | 1 | .053 | .006 | 3 | .157 | .018 |
| Cunaxidae : Cunaxoides sp. | 1 | .052 | .043 | | | | 1 | .052 | .043 | | | | | | |
| Rdellidae : Rdella sp. | | | | | | | | | | | | | | | |
| Pyemotidae : Pygmephorus sp. | 425 | 22.286 | 6.474 | 77 | 4.038 | 1.173 | 15 | .787 | .228 | 330 | 17.305 | 5.027 | 3 | .157 | .046 |
| Tarsonemidae : Tarsonemus sp. | 1 | .052 | .006 | | | | | | | 1 | .052 | .006 | | | |
| Scutacaridae : Scutacarus sp. | 22 | 1.154 | .134 | 2 | .105 | .012 | 2 | .105 | .012 | 6 | .315 | .037 | 12 | .629 | .073 |
| Eupodidae : Eupodes sp. | 3 | .158 | .128 | | | | 1 | .052 | .043 | 2 | .105 | .085 | | | |
| Pachygnathidae : Bimicheali sp. | 4 | .210 | .195 | | | | 3 | .157 | .146 | | | | 1 | .053 | .049 |
| Pachygnathus sp. | 9 | .472 | .439 | 3 | .157 | .146 | | | | 2 | .105 | .097 | 4 | .210 | .195 |
| Paratydeidae : Scolotygeus sp. | 2 | .105 | .073 | 2 | .105 | .073 | | | | | | | | | |
| Tetranychidae : Brevipalpus sp. | 1 | .052 | .043 | | | | | | | | | | | | |
| 1041 | 54.588 | 10.672 | 461 | 24.173 | 3.253 | 53 | 2.778 | .759 | 499 | 26.167 | 6.177 | 28 | 1.468 | .481 | |
| MESOSTIGMATA | | | | | | | | | | | | | | | |
| Rhodacaridae : Rhodacarus sp. | 3 | .158 | .018 | 1 | .052 | .006 | 1 | .052 | .006 | | | | 1 | .052 | .006 |
| Digamasellidae : Digamasellus sp. | 1 | .052 | .055 | 1 | .052 | .006 | | | | | | | | | |
| Laelaptidae : Geolaelaps sp. | 13 | .682 | .792 | | | | 6 | .315 | .366 | 3 | .157 | .182 | 4 | .210 | .244 |
| Hypoaspis sp. | 2 | .105 | .122 | | | | | | | 2 | .105 | .123 | | | |
| Phytoseiidae : Amblyseius sp. | 16 | .839 | .975 | | | | | | | 16 | .839 | .975 | | | |
| Ascidae : Protogamasellus sp. | 10 | .524 | .061 | 1 | .053 | .055 | 2 | .105 | .012 | 5 | .262 | .030 | 2 | .105 | .012 |
| Gamasellodes sp. | 1 | .052 | .055 | | | | | | | | | | 1 | .053 | .055 |
| Lasioseius sp. | 30 | 1.573 | 1.828 | | | | | | | 27 | 1.416 | 1.645 | 3 | .157 | .183 |
| Pachylaelaptidae : Pachylaelaps sp. | 17 | .822 | 2.589 | | | | | | | | | | 17 | .822 | 2.589 |
| 93 | 4.877 | 6.495 | 3 | .157 | .067 | 9 | .472 | .384 | 53 | 2.779 | 2.955 | 28 | 1.469 | 3.089 | |
| ACARIIDAE | | | | | | | | | | | | | | | |
| Acaridae : Tyrophagus sp. | 8 | .419 | .341 | 8 | .420 | .341 | | | | | | | | | |
| ORIBATEI | | | | | | | | | | | | | | | |
| Oribatulidae : Scheloribatates sp. | 372 | 19.507 | 21.770 | 18 | .944 | 1.066 | 30 | 1.573 | 1.730 | 184 | 9.649 | 10.949 | 140 | 7.341 | 8.024 |
| Liolidae : Liodes sp. | 8 | .420 | .332 | | | | 2 | .105 | .058 | 6 | .315 | .274 | | | |
| Plateremidae : Pearocorticella sp. | 6 | .213 | .214 | 2 | .105 | .092 | 2 | .105 | .030 | | | | 2 | .105 | .092 |
| Passalozetidae : Passalozetes sp. | 24 | 1.258 | .366 | | | | | | | 24 | 1.258 | .366 | | | |
| Perlohmanniidae sp. | 5 | .262 | .228 | 2 | .105 | .091 | | | | | | | 3 | .157 | .137 |
| Oppiidae : Oppia sp. | 24 | 1.258 | .366 | 4 | .210 | .061 | | | | 14 | .734 | .213 | 5 | .315 | .091 |
| 439 | 23.020 | 23.275 | 26 | 1.364 | 1.310 | 34 | 1.783 | 1.818 | 228 | 11.956 | 11.802 | 151 | 7.918 | 8.344 | |
| INSECTA | | | | | | | | | | | | | | | |
| COLLEMBOLA | | | | | | | | | | | | | | | |
| Onychiuridae : Onychiurus sp. | 37 | 1.941 | 2.255 | 4 | .210 | .244 | 27 | 1.416 | .640 | 1 | .052 | .061 | 5 | .262 | .305 |
| Isotomidae : Isotomina sp. | 255 | 13.372 | 27.190 | 18 | .944 | 1.919 | 6 | .315 | 1.645 | 227 | 11.904 | 24.204 | 4 | .210 | .427 |
| Achorutidae : Brachystomella sp. | 2 | .105 | .182 | | | | | | | 2 | .105 | .183 | | | |
| HEMITEPHELA | | | | | | | | | | | | | | | |
| Reduviidae sp. | 2 | .104 | 2.436 | 1 | .052 | 1.218 | | | | 1 | .052 | 1.218 | | | |
| Isometopidae : Letaba sp. | 2 | .105 | 9.200 | | | | | | | 2 | .105 | 9.200 | | | |
| HOMOPTERA | | | | | | | | | | | | | | | |
| Coccidae sp. | 1 | .052 | .046 | | | | 1 | .053 | .046 | | | | | | |
| THYSANOPTERA | | | | | | | | | | | | | | | |
| Phlaeothripidae : Urotarips sp. | 2 | .105 | 2.438 | 1 | .053 | 1.219 | | | | | | | 1 | .052 | 1.219 |
| Faurothrips sp. | 1 | .052 | 1.219 | | | | | | | 1 | .052 | 1.219 | | | |
| LEPIDOPTERA | | | | | | | | | | | | | | | |
| Noctuidae : Lapygma sp. | 14 | .734 | 7.677 | | | | | | | 14 | .734 | 7.677 | | | |
| DIPTERA | | | | | | | | | | | | | | | |
| Cecidomyiidae sp. | 5 | .262 | 3.808 | | | | 2 | .105 | 1.523 | 2 | .105 | 1.523 | 1 | .053 | .762 |
| COLEOPTERA | | | | | | | | | | | | | | | |
| Tenebrionidae sp. | 1 | .052 | .548 | | | | | | | | | | 1 | .052 | .548 |
| HYMENOPTERA | | | | | | | | | | | | | | | |
| Formicidae : Pheidole sp. | | | | | | | | | | | | | | | |
| DIPLOPODA | | | | | | | | | | | | | | | |
| SPIROSTREPTOMORPHA | | | | | | | | | | | | | | | |
| Spirostreptidae sp. | 1 | .052 | 2.072 | | | | 1 | .052 | 2.072 | | | | | | |
| PAUROPODA | | | | | | | | | | | | | | | |
| Pauropidae : Pauropus sp. | 1 | .052 | .055 | | | | 1 | .052 | .055 | | | | | | |
| CRUSTACEA | | | | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | | | | |
| Cyclopidae : Mesocyclops sp. | 2 | .105 | .091 | 1 | .052 | .046 | | | | 1 | .053 | .046 | | | |
| 326 | 17.095 | 59.217 | 25 | 1.311 | 4.646 | 38 | 1.994 | 5.981 | 251 | 13.162 | 45.331 | 12 | .629 | 3.261 | |
| 1907 | 99.999 | 100.000 | 523 | 27.425 | 9.617 | 134 | 7.027 | 8.942 | 1031 | 54.064 | 66.265 | 219 | 11.848 | 15.175 | |

TABLE 17 NUMBERS AND BIOMASS VALUES OF MICROARTHROPODS FOR PLOT C

| | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|---|-------|---------|---------|-----------|---------|---------|----------------|---------|---------|--------------|---------|---------|------------|---------|---------|
| | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % |
| ACARI | | | | | | | | | | | | | | | |
| TROMBIDIFORMES | | | | | | | | | | | | | | | |
| Tydeidae: Tydaeus sp. | 189 | 16.890 | .897 | 98 | 8.758 | .465 | 23 | 2.056 | .109 | 68 | 6.077 | .323 | | | |
| Microtydeus sp. | 13 | 1.162 | .082 | 4 | .358 | .025 | 1 | .089 | .006 | 8 | .715 | .051 | | | |
| Lorryia sp. | 4 | .357 | .171 | 1 | .089 | .043 | 3 | .268 | .128 | | | | | | |
| Paralorryia sp. | | | | | | | | | | | | | | | |
| Nanorchestidae: Speleorchestes sp. | 43 | 3.843 | .272 | 7 | .626 | .044 | 8 | .715 | .051 | 1 | .089 | .006 | 27 | 2.413 | .171 |
| Bdellidae: Bdella sp. | 1 | .089 | .044 | 1 | .089 | .044 | | | | | | | | | |
| Stigmaeidae: Ledermulleria sp. | 1 | .089 | .051 | 1 | .089 | .051 | | | | | | | | | |
| Pyemotidae: Pygmephorus sp. | 24 | 2.145 | .380 | 7 | .626 | .111 | 3 | .268 | .047 | 14 | 1.251 | .221 | | | |
| Tarsonemidae: Tarsonemus sp. | 15 | 1.341 | .044 | 12 | 1.072 | .076 | | | | 3 | .268 | .019 | | | |
| Eupodidae: Eupodas sp. | 1 | .089 | .044 | | | | | | | 1 | .089 | .044 | | | |
| Pachygnathidae: Bimichealia sp. | 1 | .089 | .051 | | | | 1 | .090 | .051 | | | | | | |
| Pachygnathus sp. | 3 | .268 | .152 | 2 | .179 | .101 | | | | 1 | .089 | .051 | | | |
| Paratydeidae: Scolotydeus sp. | 2 | .179 | .076 | | | | 1 | .089 | .038 | | | | 1 | .089 | .038 |
| | 297 | 26.541 | 2.314 | 133 | 11.886 | .960 | 40 | 3.575 | .430 | 96 | 8.578 | .715 | 28 | 2.502 | .209 |
| MESOSTIGMATA | | | | | | | | | | | | | | | |
| Rhodacaridae: Rhodacarus sp. | 2 | .179 | .013 | | | | | | | | | | 2 | .179 | .013 |
| Laelaptidae: Geolaelaps sp. | 1 | .089 | .063 | | | | | | | 1 | .089 | .063 | | | |
| Hyposp. sp. | 2 | .179 | .126 | | | | | | | | .179 | .127 | | | |
| Phytoseiidae: Amblyseius sp. | 2 | .179 | .126 | | | | | | | 1 | .089 | .127 | | | |
| Ascidae: Protogamasellus sp. | 8 | .715 | .051 | 1 | .089 | .006 | | | | 6 | .536 | .038 | 1 | .089 | .006 |
| Pachylaelaptidae: Pachylaelaps sp. | 4 | .358 | .633 | | | | 3 | .268 | .475 | 1 | .089 | .158 | | | |
| | 19 | 1.699 | 1.012 | 1 | .089 | .006 | 3 | .268 | .475 | 12 | 1.072 | .513 | 3 | .268 | .019 |
| ACARIDIAE | | | | | | | | | | | | | | | |
| Acaridae: Tyrophagus sp. | 3 | .268 | .133 | 1 | .089 | .044 | | | | 2 | .179 | .086 | | | |
| ORIBATEI | | | | | | | | | | | | | | | |
| Oribatulidae: Scheloribates sp. | 126 | 11.260 | 7.568 | 25 | 2.234 | 1.525 | 79 | 7.060 | 4.714 | 15 | 1.341 | .918 | 7 | .626 | .411 |
| Plateremaeidae: Perrocorticella sp. | 5 | .447 | .237 | 4 | .358 | .190 | | | | 1 | .089 | .047 | | | |
| Passalozetidae: Passalozetes sp. | 6 | .536 | .095 | 6 | .536 | .095 | | | | | | | | | |
| Oppiidae: Oppia sp. | 11 | .983 | .174 | 2 | .179 | .031 | | | | 7 | .626 | .111 | 2 | .179 | .032 |
| Perlohmanniidae sp. | 6 | .536 | .285 | 6 | .536 | .285 | | | | | | | | | |
| Epilohmanniidae; Epilohmannia sp. | 3 | .268 | .114 | | | | | | | 2 | .179 | .076 | 1 | .089 | .038 |
| | 157 | 14.030 | 8.473 | 43 | 3.843 | 2.126 | 79 | 7.060 | 4.714 | 25 | 2.235 | 1.152 | 10 | .894 | .481 |
| INSECTA | | | | | | | | | | | | | | | |
| COLLEMBOLA | | | | | | | | | | | | | | | |
| Onychiuridae: Onychiurus sp. | 62 | 5.541 | 3.923 | 2 | .179 | .127 | | | | 52 | 4.647 | 3.290 | 8 | .715 | .506 |
| Isotomidae: Isotomina sp. | 537 | 47.989 | 59.466 | | | | 3 | .268 | .332 | 531 | 47.453 | 58.801 | 3 | .268 | .332 |
| DIPLURA | | | | | | | | | | | | | | | |
| Japygidae: Japyx sp. | 9 | .804 | 2.848 | | | | 1 | .090 | .317 | 7 | .625 | 2.215 | 1 | .090 | .317 |
| CORRODENTIA | | | | | | | | | | | | | | | |
| Liposcellidae sp. | 3 | .268 | .190 | | | | 1 | .089 | .063 | 2 | .179 | .127 | | | |
| HEMIPTERA | | | | | | | | | | | | | | | |
| Reduviidae sp. | 2 | .179 | 2.531 | 2 | .179 | 2.531 | | | | | | | | | |
| HOMOPTERA | | | | | | | | | | | | | | | |
| Coccidae sp. | 1 | .089 | .047 | | | | | | | | | | 1 | .089 | .047 |
| Aphididae sp. | 2 | .179 | 1.898 | | | | | | | 2 | .179 | 1.898 | | | |
| THYSANOPTERA | | | | | | | | | | | | | | | |
| Phlaeothripidae: Urothrips sp. | | | | | | | | | | | | | | | |
| Faureothrips sp. | | | | | | | | | | | | | | | |
| LEPIDOPTERA | | | | | | | | | | | | | | | |
| Noctuidae: Lapygma sp. | 19 | 1.698 | 10.821 | | | | | | | 19 | 1.698 | 10.821 | | | |
| DIPTERA | | | | | | | | | | | | | | | |
| Cecidomyiidae sp. | 1 | .089 | .791 | | | | | | | 1 | .090 | .791 | | | |
| COLEOPTERA | | | | | | | | | | | | | | | |
| Tenebrionidae sp. | 2 | .179 | 1.139 | 1 | .089 | .570 | | | | 1 | .089 | .570 | | | |
| DIPLOPODA | | | | | | | | | | | | | | | |
| SPIROSTREPTOMORPHA | | | | | | | | | | | | | | | |
| Spirostreptidae sp. | 2 | .179 | 4.303 | | | | | | | 1 | .089 | 2.152 | 1 | .089 | 2.152 |
| PAUROPODA | | | | | | | | | | | | | | | |
| Pauropidae: Pauropus sp. | 1 | .089 | .057 | | | | 1 | .089 | .057 | | | | | | |
| TARDIGRADA | | | | | | | | | | | | | | | |
| EUTARDIGRADA | | | | | | | | | | | | | | | |
| macrobatiidae sp. | 1 | .089 | .006 | 1 | .089 | .006 | | | | | | | | | |
| CRUSTACEA | | | | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | | | | |
| Cyclopidae: Mesocyclops sp. | 1 | .089 | .047 | 1 | .089 | .047 | | | | | | | | | |
| | 643 | 57.462 | 88.067 | 7 | .625 | 3.281 | 6 | .523 | .769 | 615 | 55.049 | 80.665 | 14 | 1.251 | 3.354 |
| | 1119 | 100.000 | 99.999 | 185 | 16.532 | 6.417 | 128 | 11.439 | 6.388 | 751 | 67.113 | 83.131 | 55 | 4.915 | 4.063 |

TABLE 18 NUMBERS AND BIOMASS VALUES OF MICROARTHROPODS FOR PLOT D

| | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|---|-------|---------|---------|-----------|---------|---------|----------------|---------|---------|--------------|---------|---------|------------|---------|---------|
| | Numb. | % Biom. | % Biom. | Numb. | % Biom. | % Biom. | Numb. | % Biom. | % Biom. | Numb. | % Biom. | % Biom. | Numb. | % Biom. | % Biom. |
| ACARI | | | | | | | | | | | | | | | |
| TROMBIDIFORMES | | | | | | | | | | | | | | | |
| Tydeidae : Tydaeus sp. | 418 | 23.404 | 1.559 | 314 | 17.581 | 1.171 | 65 | 3.639 | .242 | 34 | 1.904 | .127 | 5 | .280 | .019 |
| Microtydeus sp. | 52 | 2.911 | .258 | 13 | .728 | .064 | 31 | 1.736 | .154 | 8 | .448 | .040 | | | |
| Lorryia sp. | 3 | .168 | .101 | | | | | | | 2 | .112 | .067 | 1 | .056 | .033 |
| Nanorchestidae : Speleorchestes sp. | 26 | 1.456 | .129 | 10 | .560 | .050 | 5 | .280 | .025 | | | | 11 | .616 | .055 |
| Nanorchestes sp. | 3 | .168 | .015 | | | | | | | | | | 3 | .168 | .015 |
| Cunaxidae : Cunaxa sp. | 2 | .112 | .070 | | | | | | | 2 | .112 | .070 | | | |
| Bdellidae : Bdella sp. | 4 | .224 | .139 | 2 | .112 | .070 | 1 | .056 | .035 | | | | 1 | .056 | .035 |
| Raphignathidae : Acheles sp. | 2 | .112 | .089 | | | | | | | 2 | .112 | .089 | | | |
| Stigmaeidae : Lederulleria sp. | 2 | .112 | .079 | 1 | .056 | .040 | 1 | .056 | .040 | | | | | | |
| Lederulleriopsis sp. | 1 | .056 | .040 | | | | 1 | .056 | .040 | | | | | | |
| Cheyletidae : Paracheyletia sp. | 1 | .056 | .005 | 1 | .056 | .005 | | | | | | | | | |
| Pyemotidae : Pygmephorus sp. | 4 | .224 | .050 | 2 | .112 | .025 | | | | | | | 1 | .056 | .012 |
| Tarsonemidae : Tarsonemus sp. | 5 | .280 | .025 | 3 | .168 | .015 | 2 | .112 | .010 | | | | | | |
| Scutacaridae : Scutacarus sp. | 2 | .112 | .010 | | | | | | | 2 | .112 | .010 | | | |
| Eupodidae : Eupodes sp. | 1 | .056 | .035 | | | | | | | 1 | .056 | .035 | | | |
| Tetranychidae : Brevipalpus sp. | 1 | .056 | .035 | | | | | | | | | | | | |
| MESOSTIGMATA | | | | | | | | | | | | | | | |
| Laelaptidae : Geolaelaps sp. | 3 | .168 | .149 | 1 | .056 | .050 | 1 | .056 | .050 | | | | 1 | .056 | .050 |
| Hypoaspis sp. | 5 | .280 | .249 | 2 | .112 | .099 | | | | 2 | .112 | .099 | 1 | .056 | .050 |
| Rhodacariidae : Rhodacarus sp. | 24 | 1.344 | .119 | 9 | .504 | .045 | 12 | .672 | .060 | 1 | .056 | .005 | 2 | .112 | .010 |
| Phytoseiidae : Amblyseius sp. | 8 | .447 | .398 | 2 | .112 | .099 | 1 | .056 | .049 | 4 | .224 | .199 | 1 | .056 | .049 |
| Ascidae : Protogamasellus sp. | 11 | .616 | .055 | 2 | .112 | .010 | 1 | .056 | .005 | 6 | .336 | .030 | 2 | .112 | .010 |
| ACARIDIAE | | | | | | | | | | | | | | | |
| Acaridae : Tyrophagus sp. | 24 | 1.334 | .716 | 11 | .616 | .264 | 9 | .504 | .313 | | | | 4 | .224 | .139 |
| ORIBATEI | | | | | | | | | | | | | | | |
| Oribatulidae : Scheloribates sp. | 162 | 9.071 | 7.325 | 36 | 2.016 | 1.631 | 52 | 2.911 | 2.382 | 17 | .952 | .761 | 57 | 3.181 | 2.551 |
| Oppiidae : Oppia sp. | 7 | .392 | .087 | | | | 3 | .168 | .037 | 1 | .056 | .013 | 3 | .168 | .037 |
| Perlohmanniidae sp. | 8 | .447 | .298 | | | | 7 | .392 | .261 | | | | 1 | .056 | .037 |
| Epilohmanniidae : Epilohmannia sp. | 34 | 1.904 | 1.014 | 4 | .224 | .119 | 14 | .784 | .418 | 5 | .280 | .149 | 11 | .616 | .328 |
| Larvae unknown | 1 | .056 | .008 | | | | | | | | | | 1 | .056 | .008 |
| INSECTA | | | | | | | | | | | | | | | |
| COLLEMBOLA | | | | | | | | | | | | | | | |
| Onychiuridae : Onychiurus sp. | 94 | 5.263 | 4.674 | | | | 7 | .392 | .348 | 46 | 2.575 | 2.287 | 41 | 2.296 | 2.039 |
| Isotomidae : Isotomina sp. | 495 | 27.715 | 43.076 | 18 | 1.008 | 1.566 | 13 | .728 | 1.131 | 421 | 23.572 | 36.636 | 43 | 2.408 | 3.724 |
| Achorutidae : Brachystomella sp. | 354 | 19.821 | 26.406 | | | | | | | 333 | 18.645 | 24.839 | 21 | 1.175 | 1.566 |
| DIPLURA | | | | | | | | | | | | | | | |
| Japygidae : Japyx sp. | 1 | .056 | .249 | | | | | | | 1 | .056 | .249 | | | |
| CORRODENTIA | | | | | | | | | | | | | | | |
| Liposcellidae sp. | 9 | .504 | .447 | 4 | .224 | .199 | | | | 5 | .280 | .249 | | | |
| HEMIPTERA | | | | | | | | | | | | | | | |
| Reduviidae sp. | 1 | .056 | .995 | 1 | .056 | .995 | | | | | | | | | |
| THYSANOPTERA | | | | | | | | | | | | | | | |
| Phlaeothripidae : Urothrips sp. | 2 | .112 | 1.989 | | | | 2 | .112 | 1.989 | | | | | | |
| Faureothrips sp. | | | | | | | | | | | | | | | |
| COLEOPTERA | | | | | | | | | | | | | | | |
| Tenebrionidae sp. | 3 | .168 | 1.343 | 2 | .112 | .895 | | | | 1 | .056 | .447 | | | |
| HYMENOPTERA | | | | | | | | | | | | | | | |
| Formicidae : Pheidole sp. | 5 | .280 | 7.459 | | | | | | | 1 | .056 | 1.492 | 4 | .224 | 5.967 |
| PAUROPODA | | | | | | | | | | | | | | | |
| Pauropidae : Pauropus sp. | 1 | .056 | .045 | 1 | .056 | .045 | | | | | | | | | |
| CRUSTACEA | | | | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | | | | |
| Cyclopidae : Mesocyclops sp. | 7 | .392 | .261 | 4 | .224 | .149 | 2 | .112 | .075 | 1 | .056 | .037 | | | |
| TOTAL | | | | | | | | | | | | | | | |
| | 972 | 54.423 | 86.943 | 30 | 1.680 | 3.849 | 24 | 1.344 | 3.543 | 809 | 45.296 | 66.236 | 109 | 6.103 | 13.314 |
| | 1786 | 99.999 | 100.000 | 443 | 24.804 | 7.606 | 230 | 12.878 | 7.664 | 897 | 50.224 | 67.942 | 216 | 12.094 | 16.787 |

TABLE 19 NUMBERS AND BIOMASS VALUES OF MICROARTHROPODS FOR PLOT E

| | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|---|-------|---------|---------|-----------|---------|---------|----------------|---------|---------|--------------|---------|---------|------------|---------|---------|
| | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % | Numb. | Numb. % | Biom. % |
| ACARI | | | | | | | | | | | | | | | |
| TROMBIDIFORMES | | | | | | | | | | | | | | | |
| Tydeidae : Tydaeus sp. | 195 | 7.695 | .381 | 139 | 5.485 | .272 | 8 | .316 | .016 | 44 | 1.736 | .086 | 4 | .158 | .008 |
| Microtydeus sp. | 51 | 2.013 | .133 | 24 | .947 | .062 | 12 | .474 | .031 | 3 | .118 | .008 | 12 | .474 | .031 |
| Lorryia sp. | 11 | .434 | .193 | | | | | | | | | | 11 | .434 | .194 |
| Paralorryia sp. | | | | | | | | | | | | | 4 | .158 | .010 |
| Nanorchestidae : Speleorchestes sp. | 21 | .829 | .055 | 5 | .197 | .013 | 12 | .474 | .031 | | | | 8 | .316 | .052 |
| Pyemotidae : Pygmaephorus sp. | 17 | .671 | .111 | 4 | .158 | .026 | | | | 5 | .197 | .033 | 4 | .158 | .052 |
| | 295 | 11.642 | .873 | 172 | 6.787 | .373 | 32 | 1.264 | .078 | 52 | 2.052 | .127 | 39 | 1.540 | .295 |
| MESOSTIGMATA | | | | | | | | | | | | | | | |
| Rhodacaridae : Rhodacarus sp. | 6 | .237 | .016 | 2 | .079 | .005 | 2 | .079 | .005 | 1 | .040 | .003 | 1 | .040 | .003 |
| Laelaptidae : Geolaelaps sp. | 5 | .197 | .130 | | | | | | | | | | 5 | .197 | .130 |
| Hyposapis sp. | 2 | .079 | .052 | | | | | | | 2 | .079 | .052 | | | |
| Phytoseiidae : Amblyseius sp. | 4 | .158 | .104 | 3 | .118 | .078 | 1 | .039 | .026 | | | | | | |
| Ascidae : Protogamasellus sp. | 20 | .789 | .052 | 3 | .118 | .008 | | | | 7 | .276 | .018 | 10 | .395 | .026 |
| | 37 | 1.460 | .354 | 8 | .315 | .091 | 3 | .118 | .031 | 10 | .395 | .073 | 16 | .632 | .159 |
| ORIBATEI | | | | | | | | | | | | | | | |
| Oribatulidae : Scheloribates sp. | 93 | 3.670 | 2.200 | 9 | .355 | .219 | 2 | .079 | .047 | 8 | .316 | .195 | 74 | 2.920 | 1.738 |
| Oppiidae : Oppia sp. | 16 | .631 | .104 | 5 | .191 | .033 | 7 | .276 | .046 | 4 | .158 | .026 | | | |
| Perlohmanniidae sp. | 6 | .237 | .117 | | | | | | | 2 | .079 | .039 | 4 | .158 | .078 |
| Epilohmanniidae : Epilohmannia sp. | 43 | 1.697 | .672 | 11 | .434 | .172 | 5 | .198 | .078 | 11 | .434 | .172 | 16 | .632 | .250 |
| Carabodidae sp. | 1 | .040 | .020 | | | | | | | 1 | .039 | .020 | | | |
| | 159 | 6.275 | 3.113 | 25 | .986 | .424 | 14 | .553 | .171 | 26 | 1.026 | .452 | 94 | 3.710 | 2.066 |
| INSECTA | | | | | | | | | | | | | | | |
| COLLEMBOLA | | | | | | | | | | | | | | | |
| Onychiuridae : Onychiurus sp. | 69 | 1.723 | 1.798 | 3 | .119 | .078 | 3 | .118 | .078 | 22 | .868 | .573 | 41 | 1.618 | 1.069 |
| Isotomidae : Isotomina sp. | 1947 | 76.835 | 88.802 | 26 | 1.027 | 1.186 | 5 | .198 | .228 | 1491 | 58.840 | 68.004 | 425 | 16.772 | 19.384 |
| Achorutiidae : Brachystomella sp. | 8 | .316 | .313 | | | | | | | | | | 8 | .316 | .313 |
| Sminthuridae : Sphaeridia sp. | 1 | .039 | .005 | | | | 1 | .039 | .005 | | | | | | |
| CORRODENTIA | | | | | | | | | | | | | | | |
| Liposcellidae sp. | 4 | .158 | .104 | | | | 1 | .039 | .026 | 2 | .079 | .052 | 1 | .039 | .026 |
| HEMIPTERA | | | | | | | | | | | | | | | |
| Reduviidae sp. | 1 | .039 | .521 | | | | | | | | | | 1 | .039 | .521 |
| HOMOPTERA | | | | | | | | | | | | | | | |
| Aphididae : Macrosiphum sp. | 2 | .079 | .782 | | | | | | | 2 | .079 | .782 | | | |
| THYSANOPTERA | | | | | | | | | | | | | | | |
| Phlaeothripidae : Urothrips sp. | 3 | .118 | 1.564 | | | | 1 | .039 | .521 | 1 | .039 | .521 | 1 | .039 | .521 |
| Paureothrips sp. | | | | | | | | | | | | | | | |
| COLEOPTERA | | | | | | | | | | | | | | | |
| Tenebrionidae sp. | 2 | .079 | .626 | | | | | | | 2 | .079 | .626 | | | |
| ARACHNIDA | | | | | | | | | | | | | | | |
| ARANEIDA | | | | | | | | | | | | | | | |
| Linyphiidae sp. | 1 | .039 | 1.043 | | | | 1 | .039 | 1.043 | | | | | | |
| PAUROPODA | | | | | | | | | | | | | | | |
| Pauropidae : Pauropus sp. | 1 | .040 | .023 | | | | | | | | | | 1 | .039 | .023 |
| CRUSTACEA | | | | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | | | | |
| Cyclopidae : Mesocyclops sp. | 4 | .158 | .078 | 1 | .039 | .020 | 3 | .118 | .059 | | | | | | |
| | 2043 | 80.623 | 95.659 | 30 | 1.185 | 1.284 | 15 | .590 | 1.960 | 1520 | 59.984 | 70.558 | 478 | 18.862 | 21.857 |
| | 2534 | 100.000 | 99.999 | 235 | 9.273 | 2.172 | 64 | 2.525 | 2.240 | 1608 | 63.457 | 71.210 | 627 | 24.744 | 24.377 |

TABLE 20 NUMBERS AND BIOMASS VALUES, PLOTS A - F: FAMILIES OF TROMBIDIFORMES

| TYDEIDAE | | | | | | | | | | | | | | | |
|----------------|-------|----------|----------|-----------|-----------|----------------------|----------------|-----------|----------------------|--------------|-----------|----------------------|------------|----------|----------------------|
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | 257 | .0006297 | 163 | .0002565 | 9635.841 | 20 | .0000360 | 1182.313 | 47 | .0000720 | 2778.431 | 27 | .0001785 | 1591.122 |
| | 117 | 473 | .0007715 | 327 | .0004970 | 19329.899 | 96 | .0001595 | 5675.096 | 44 | .0000940 | 2601.086 | 6 | .0000210 | 354.694 |
| H 336 | 206 | .0003635 | 103 | .0001685 | 6088.905 | 27 | .0000770 | 1596.122 | 76 | .0001180 | 4492.785 | | | | |
| 1111 | 525 | .0009340 | 333 | .0005190 | 19685.493 | 31 | .0000945 | 1822.583 | 157 | .0003015 | 9281.147 | 4 | .0000190 | 236.463 | |
| 1109 | 651 | .0015665 | 296 | .0004690 | 17498.216 | 101 | .0003535 | 4906.592 | 214 | .0005250 | 12650.737 | 40 | .0002190 | 2364.624 | |
| NANORCHESTIDAE | | | | | | | | | | | | | | | |
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | 21 | .0000420 | 5 | .0000100 | 295.578 | 12 | .0000240 | 709.388 | | | | 4 | .0000080 | 236.463 |
| | 117 | 29 | .0000580 | 10 | .0000200 | 591.157 | 5 | .0000100 | 295.578 | | | | 14 | .0000280 | 827.519 |
| H 336 | 43 | .0000860 | 7 | .0000140 | 413.809 | 8 | .0000160 | 472.925 | 1 | .0000020 | 59.116 | 27 | .0000540 | 1596.121 | |
| 1111 | 48 | .0000960 | 44 | .0000880 | 2601.087 | | | | 1 | .0000020 | 59.116 | 3 | .0000050 | 177.345 | |
| 1109 | 635 | .0012700 | 36 | .0000720 | 2128.160 | 189 | .0003780 | 11172.847 | 357 | .0007340 | 21695.424 | 43 | .0000860 | 2541.970 | |
| CUNAXIDAE | | | | | | | | | | | | | | | |
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | | | | | | | | | | | | | | |
| | 117 | 2 | .0000280 | | | | | | | 2 | .0000280 | 118.231 | | | |
| H 336 | | | | | | | | | | | | | | | |
| 1111 | 1 | .0000140 | | | | | 1 | .0000140 | 59.116 | | | | | | |
| 1109 | 99 | .0013860 | 3 | .0000420 | 177.348 | 4 | .0000560 | 236.462 | 87 | .0012130 | 5143.056 | 5 | .0000700 | 295.579 | |
| BOELLIDAE | | | | | | | | | | | | | | | |
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | | | | | | | | | | | | | | |
| | 117 | 4 | .0000560 | 2 | .0000280 | 118.231 | 1 | .0000140 | 59.116 | | | | 1 | .0000140 | 59.116 |
| H 336 | 1 | .0000140 | 1 | .0000140 | 59.116 | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | |
| 1109 | 79 | .0011060 | 5 | .0000700 | 295.579 | 12 | .0001680 | 709.387 | 43 | .0006020 | 2541.971 | 19 | .0002660 | 1123.196 | |
| RAPHIGNATHIDAE | | | | | | | | | | | | | | | |
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | | | | | | | | | | | | | | |
| | 117 | 2 | .0000360 | | | | | | | 2 | .0000360 | 118.231 | | | |
| H 336 | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | |
| 1109 | 41 | .0007380 | 1 | .0000180 | 59.116 | | | | | 35 | .0000360 | 118.231 | 3 | .0000540 | 177.347 |
| STIGMADIDAE | | | | | | | | | | | | | | | |
| PLOTS | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| | 116 | | | | | | | | | | | | | | |
| | 117 | 3 | .0000480 | 1 | .0000160 | 59.116 | 2 | .0000320 | 118.231 | | | | | | |
| H 336 | 1 | .0000160 | 1 | .0000160 | 59.116 | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | |
| 1109 | 14 | .0002320 | 2 | .0000320 | 118.231 | 2 | .0001280 | 472.926 | 3 | .0000520 | 177.348 | 1 | .0000200 | 59.116 | |

the total mesofaunal numbers, while the biomass value was 10.672% of its total biomass. The biological control plot had 12 trombidiform families and the total of 527 mites, which represented 29.507% of its mesofaunal numbers and only 1.639% of its total biomass. Plots C and E almost had the same number of trombidiform mites with totals of 297 and 295 respectively, but differed in that the former represented 26.541% of the total numbers and the latter only 11.642%.

TYDEIDAE (fig. 11, table 20)

Of all the trombidiform families, Tydeidae had the widest distribution, the highest numbers and the most individual representatives. Concerning the numbers of Tydeidae in general, plot A had the highest numbers, followed by plots B, D, E and C respectively. This family was represented by the four genera Tydaeolus, Microtydeus, Lorryia and Paralorryia. The mites of the genera Tydaeolus and Microtydeus are true soil dwellers. The habitat of the other two mentioned genera was not ascertained, and it might be that they were only visitors from surface plants.

Tydaeolus

This genus was formerly generally known as "Coccotydeus", but, as Edward Baker (1965) pointed out, Berlese first described this genus as Tydaeolus in 1910 (Redia: 6,212). Baker (1965) gave a review of this family, and also described a new genus related to Tydaeolus, which he named Coccotydaeolus.

No representatives of this last mentioned new genus were found in the present study. The species recorded as Tydaeolus, were all identical and unknown. They were also by far the biggest contributor to Trombidiformes.

Lorryia

From this genus, the species "africanus" (Baker 1965) has been identified. A new species of Lorryia, closely related to "bedfordensis" (Baker 1965) was identified by Dr. M.K.P. Meyer, and is still in her possession for future description.

Microtydeus

The mites from this genus were all of the same unknown species. In general they attained the second highest numbers in the family Tydeidae

Paralorryia

The mites belonging to this genus were all the same and of unknown species. Few have, however, been recorded.

NANORCHESTIDAE (fig. 12, table 20)

The two genera Speleorchestes and Nanorchestes were found. Except for three specimens from Nanorchestes, all the other mites from this family belonged to Speleorchestes. No species names were recognised, but all the mites of the same genus had identical appearances. Speleorchestes sp. had their biggest

FAMILY NANORCHESTIDAE

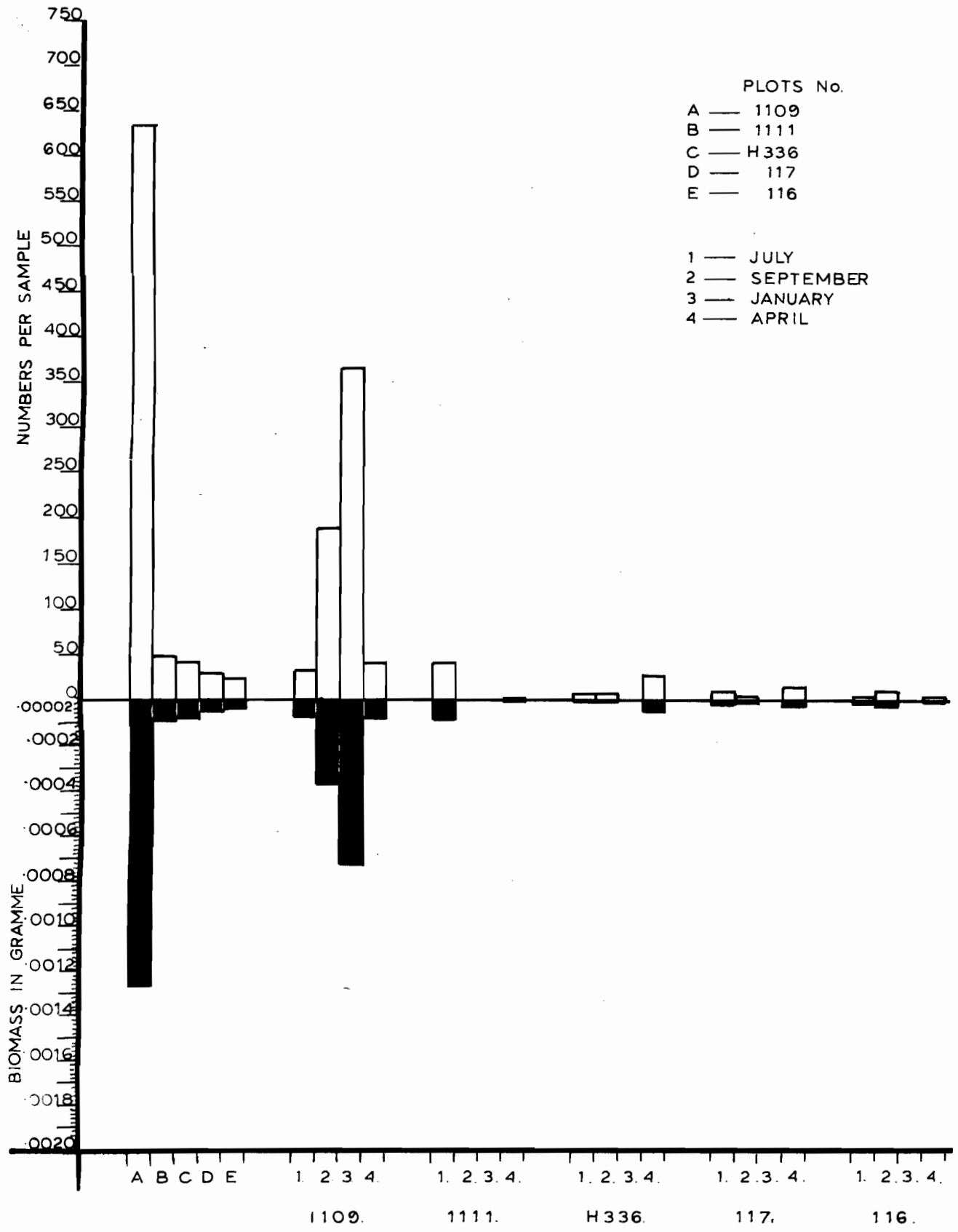


Fig. 12 Numbers and biomass plots A - E : Nanorchestidae.

concentrations on plot A.

CUNAXIDAE (fig. 13, table 20)

With the exception of one mite, all the others belonged to the genus Cunaxa. The particular species could not be identified, but is very near to C. womersleyi, (Baker & Hoffmann 1948) according to Dr. M.K.P. Meyer. Only one unidentified species of the genus Cunaxoides were found. Cunaxa sp. were concentrated in the control plot.

BDELLIDAE (fig. 14, table 20)

The bdellids were also recorded in high numbers on the control plot. All but three mites were from the genus Bdella, with the species undetermined. The other three mites, all with a striking blue appearance were from the genus Cyta. They were also of undetermined species.

RAPHIGNATHIDAE (fig. 15, table 20)

All the mites found of this particular family, belong to the species Acheles aethiopica (Meyer & Ryke 1959). Forty-three of these mites were found, of which forty-one came from the control plot, and two from the biological control plot.

STIGMAEIDAE (fig. 16, table 20)

This family was represented by three genera. The species of the genera Ledermulleria and Ledermulleriopsis are still

FAMILY CUNAXIDAE

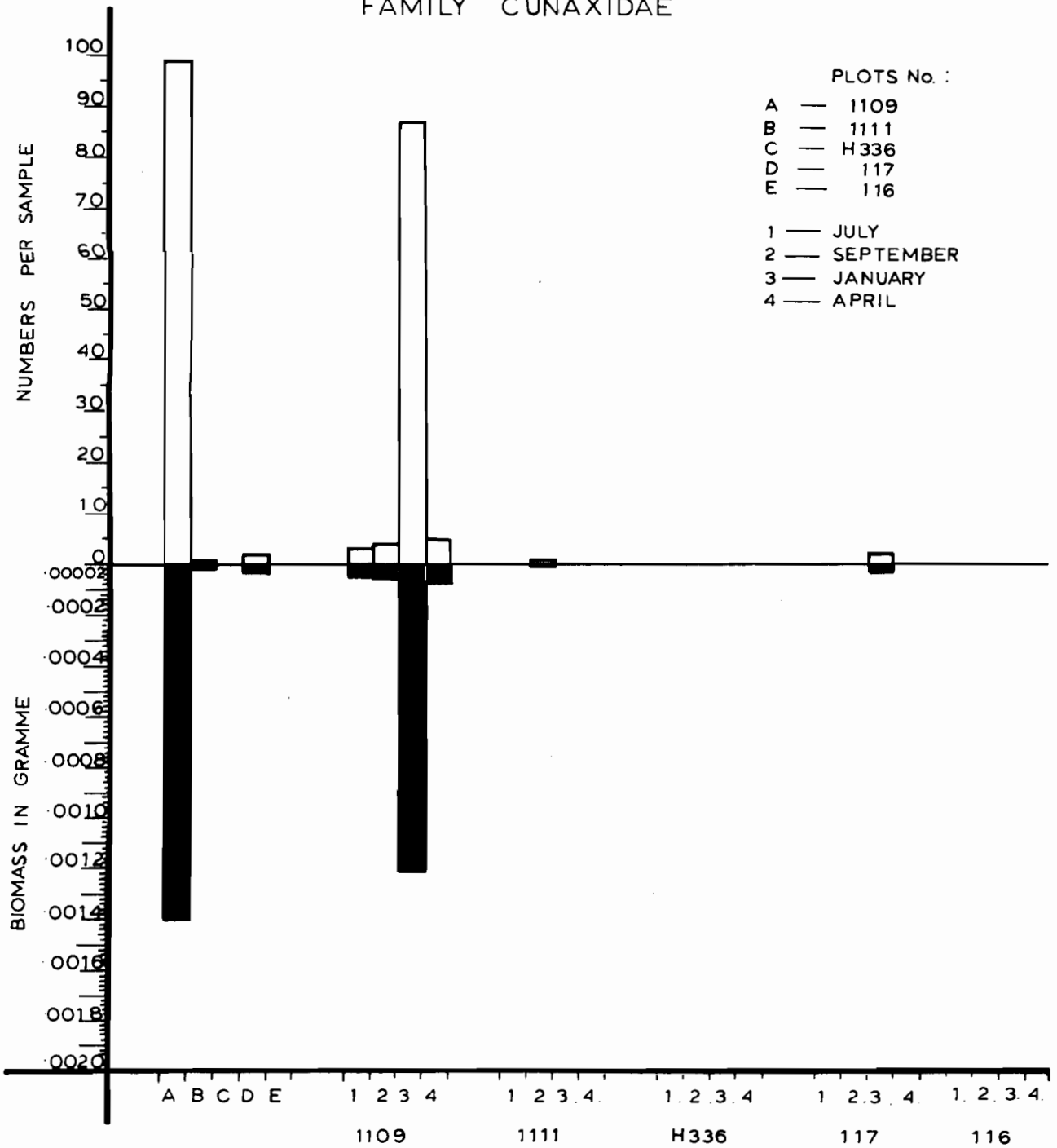


Fig. 13 Numbers and biomass plots A - E : Cunaxidae.

FAMILY BDELLIDAE

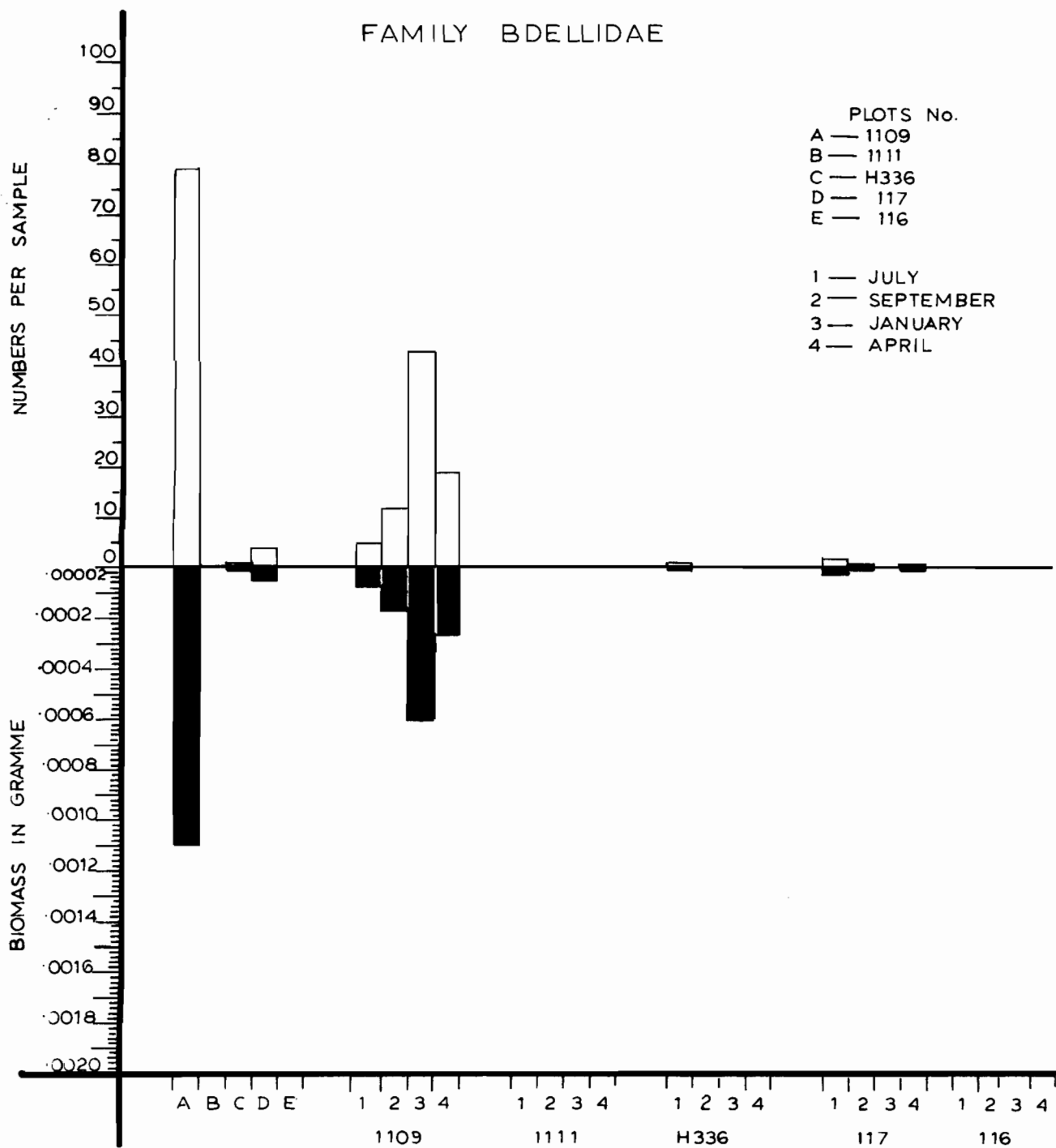
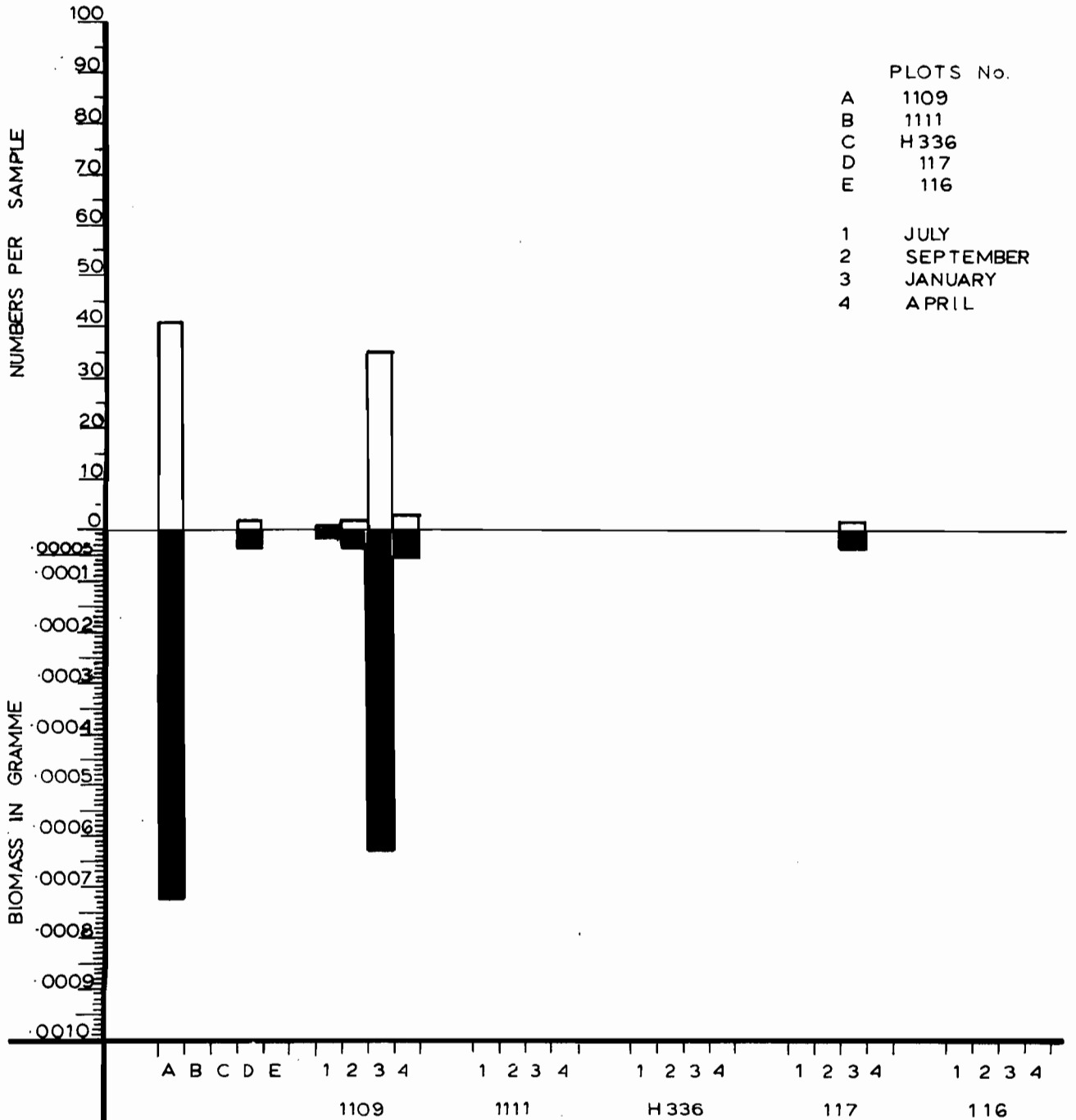


Fig. 14 Numbers and biomass plots A - E : Bdellidae.

FAMILY RAPHYGNATHIDAE



PLOTS No.
 A 1109
 B 1111
 C H336
 D 117
 E 116
 1 JULY
 2 SEPTEMBER
 3 JANUARY
 4 APRIL

Fig. 15 Numbers and biomass plots A - E : Raphygnathidae.

FAMILY STIGMAEIDAE

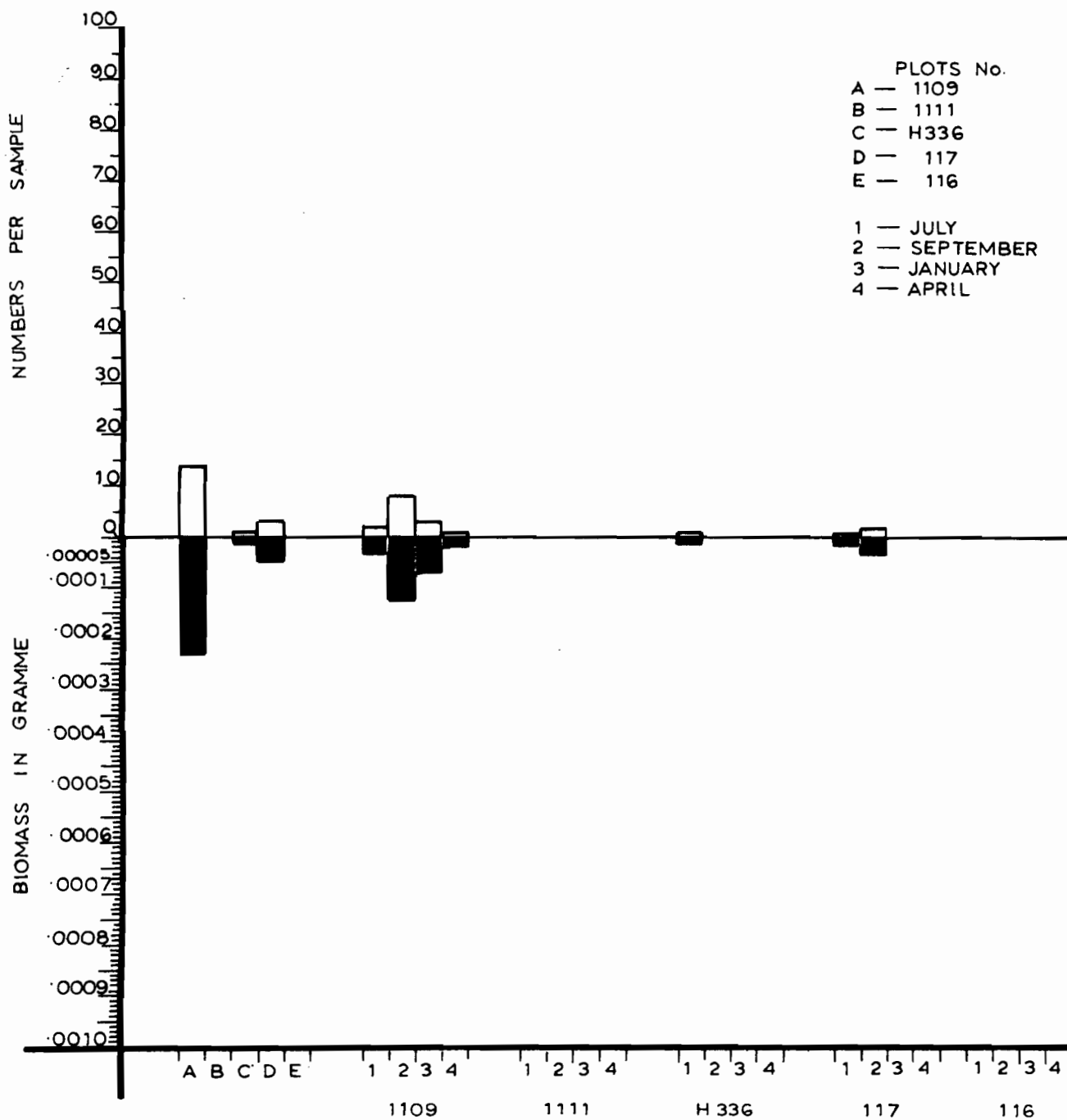


Fig. 16 Numbers and biomass plots A - E : Stigmaeidae.

undetermined, but they are most probably new species and kept by Dr. M.K.P. Meyer for future investigation. The two mentioned genera produced only a few mites, which were all found at the control- and biological control plot. A few specimens of the genus Neophyllobius were found at the control plot. They were definitely two new species, and were referred to as "sp. nov. A" and "sp. nov. B" in the tables. Both species are still in the possession of Dr. Meyer.

PSEUDOCHEYLIDAE (table 20)

The twelve mites recovered, all came from the control plot and were of the same genus and species. The genus referred to was Pseudocheylus, but the correct species was left undetermined. Dr. Meyer, however, mentioned that they could possibly be new species.

CHEYLETIDAE (table 20)

Paracheyletia sp. Only a few of these mites were recovered, and again from the control plot and biological control plot.

ERYTHRAEIDAE (fig. 17, table 20)

These colourful mites were all found exclusively in the control plot. Two genera, Smaris and Leptus were found. Forty-three out of the forty-six mites were from the species Smaris biscutatus (Meyer & Ryke). The other three species of the genus Leptus, were of undetermined species.

FAMILY ERYTHRAEIDAE

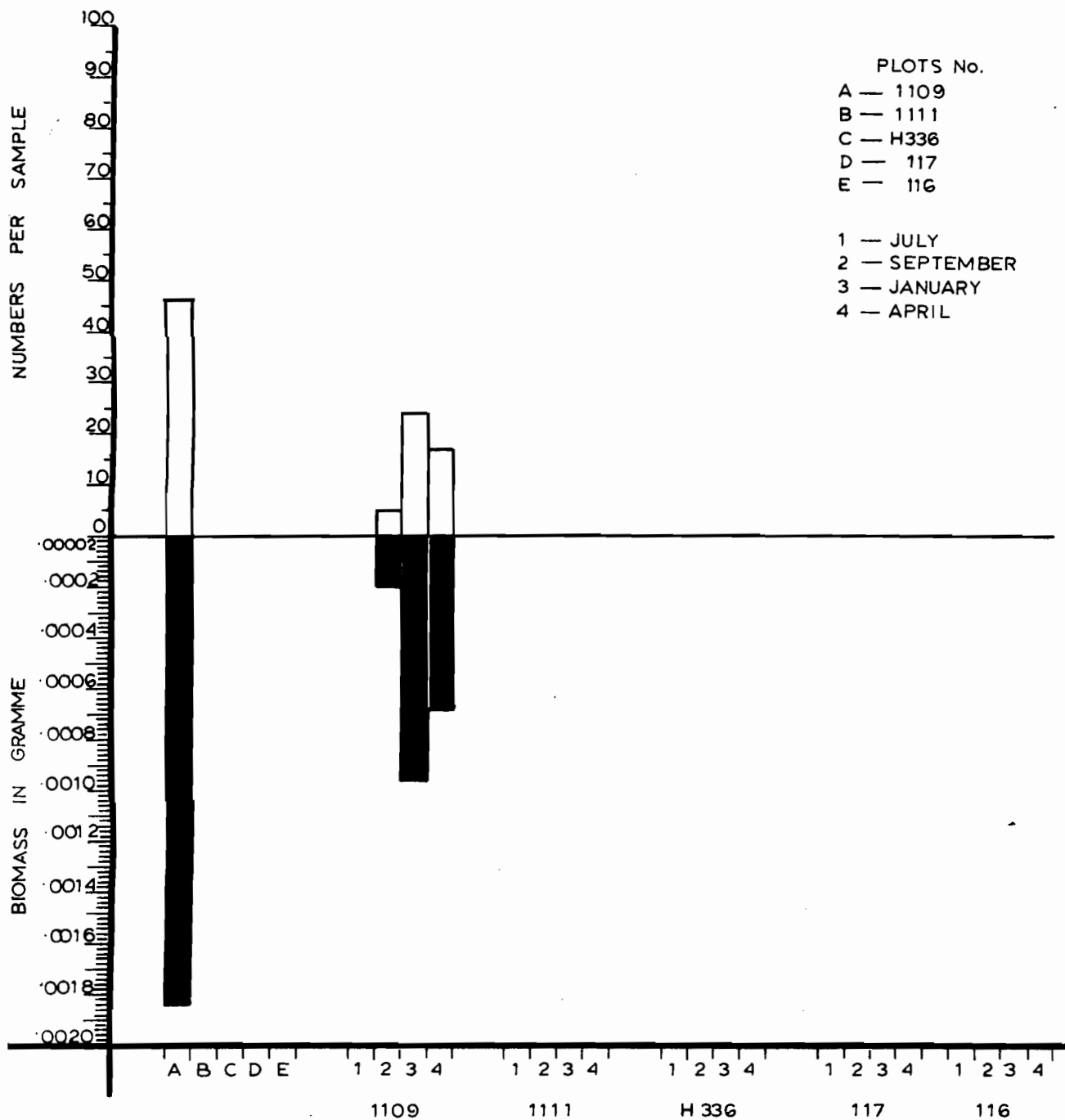


Fig. 17 Numbers and biomass plots A - E : Erythraeidae.

TABLE 20 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF TROMBIDIFORMES (CONTINUED)

| PSEUDOCHEYLIDAE | | | | | | | | | | | | | | | | |
|-----------------|----|----------|-------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|-------|------------|----------------------|--|
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 12 | .0001800 | | 7 | .0001050 | 413.809 | 1 | .0000150 | 59.116 | 1 | .0000150 | 59.116 | 3 | .0000450 | 177.347 | |
| CHEYLTIDAE | | | | | | | | | | | | | | | | |
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 6 | .0000120 | | 1 | .0000020 | 59.116 | 5 | .0000100 | 295.578 | | | | | | | |
| ERYTHRAEIDAE | | | | | | | | | | | | | | | | |
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 46 | .0018400 | | | | | 5 | .0002000 | 295.578 | 24 | .0009600 | 1418.773 | 17 | .0006800 | 1004.964 | |
| PYEMOTIDAE | | | | | | | | | | | | | | | | |
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 13 | .0000650 | | 4 | .0000200 | 236.463 | 3 | .0000150 | 118.231 | 5 | .0000250 | 295.579 | 8 | .0000400 | 472.925 | |
| | | | | 2 | .0000100 | 118.231 | 1 | .0000050 | 59.116 | 1 | .0000050 | 59.116 | 1 | .0000050 | 59.116 | |
| | | | | 7 | .0000350 | 413.809 | 14 | .0000700 | 827.618 | | | | | | | |
| | | | | 77 | .0003850 | 4551.900 | 15 | .0000750 | 885.733 | 330 | .0016500 | 19508.147 | 3 | .0000150 | 177.347 | |
| | | | | 10 | .0000500 | 591.155 | 1 | .0000050 | 59.116 | 2 | .0000100 | 118.231 | | | | |
| TARSONEMIDAE | | | | | | | | | | | | | | | | |
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 12 | .0000240 | | 3 | .0000060 | 177.347 | 2 | .0000040 | 118.231 | 3 | .0000060 | 177.347 | | | | |
| | | | | 12 | .0000240 | 709.388 | | | | 1 | .0000020 | 59.116 | 12 | .0000240 | 709.388 | |
| SCUTACARIDAE | | | | | | | | | | | | | | | | |
| PLOTS | | TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | |
| 116 | | | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | | | |
| 1109 | 4 | .0000080 | | 2 | .0000040 | 118.231 | 2 | .0000040 | 118.231 | 6 | .0000120 | 354.694 | 12 | .0000240 | 709.388 | |
| | | | | | | | | | | | | | 4 | .0000080 | 236.462 | |

PYEMOTIDAE (fig. 18, table 20)

The mites from this family were all true soil dwellers from the genus Pygmephorus. They had a general distribution through all five plots, but attained particularly high numbers in the old citrus plot. The species was unknown.

TARSONEMIDAE (table 20)

The Tarsonemidae were moderately represented. They were all of the genus Tarsonemus. Species unknown.

SCUTACARIDAE (table 20)

Just as in the case of the other two families of the Tarsonemini, this family was represented by the one genus Scutacaris only. The definite species was not known. They had about the same distribution frequency as the Tarsonemidae and Pyemotidae, and occurred in moderate numbers.

EUPODIDAE (table 20)

The Eupodidae extracted were the distinctive genus Eupodes, and the two species dealt with were E. variegatus, (Meyer and Ryke 1960), and E. parafusifer (Meyer & Ryke 1960)

ANYSTIDAE (table 20)

The five specimens recovered were all from the species Anystis baccharum (Linn.), and were found only at the control plot.

FAMILY PYEMOTIDAE

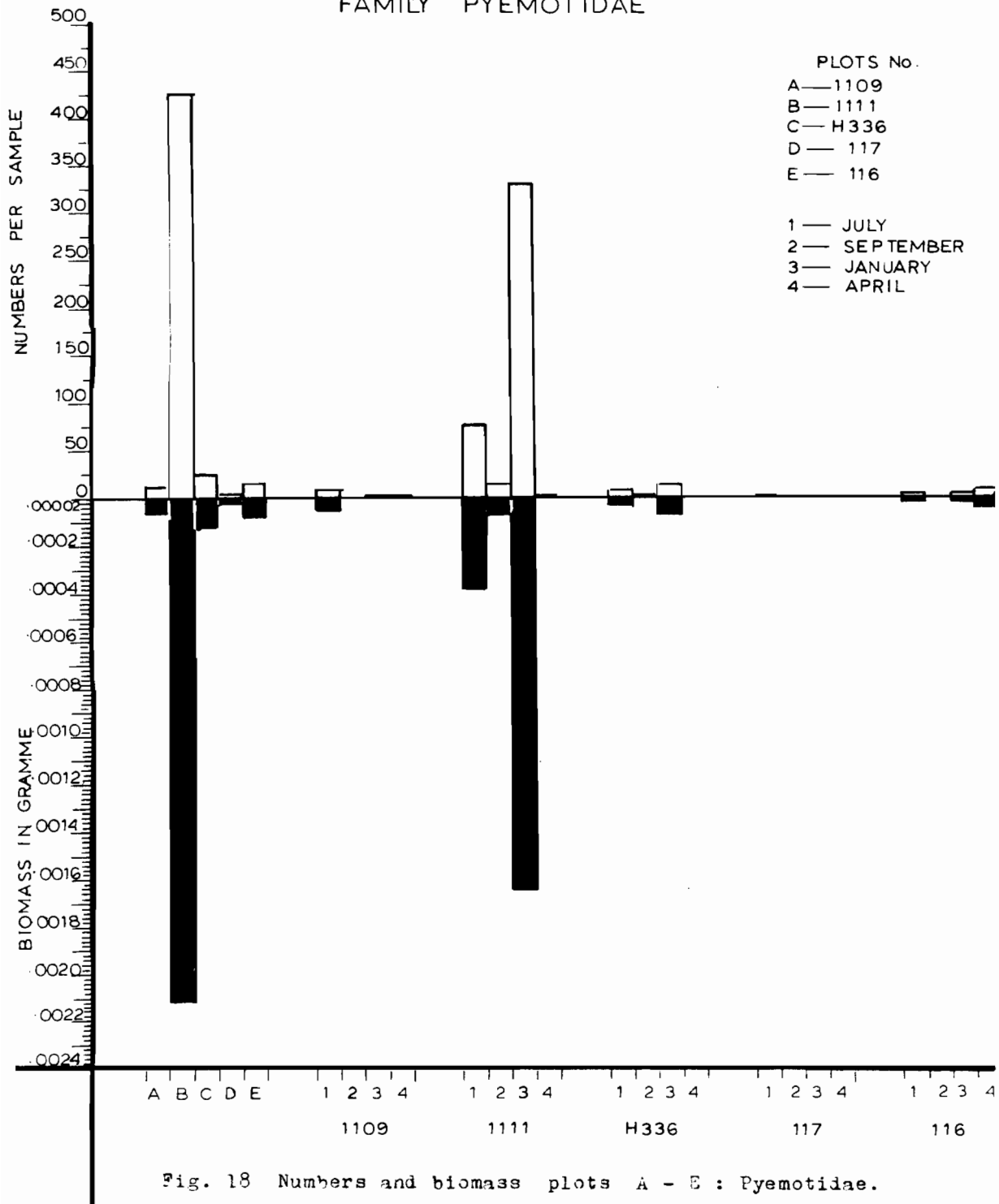


Fig. 18 Numbers and biomass plots A - E : Pyemotidae.

CRYPTOGNATHIDAE (table 20)

The three mites found were all of the genus and species Cryptognathus cucurbita, subspecies cucurbitella (Meyer, & Ryke, 1959). These mites were recovered from the control plot.

LORDALYCHIDAE (tabel 20)

Just a few specimens from the genus Lordalychus were found at the control plot. The species was undetermined.

PACHYGNATHIDAE (fig. 19, table 20)

The two genera recorded were Bimichealia and Pachygnathus. The species are still undetermined, but Dr. Meyer has special interest in this family.

PARTYDEIDAE (tabel 20)

Only a few specimens from the genus Scolotydeus were found. No species could be indentified. Mr. P. Theron, a research student at the Potchefstroom University is at the moment busy with a taxonomic study of this particular family.

TETRANYCHIDAE (table 20)

The two specimens of Brevipalpus obovatus (Donnadieu, 1875) found, were plant parasites which must have fallen from the trees. They were found on plots B and D.

FAMILY PACHYGNATHIDAE

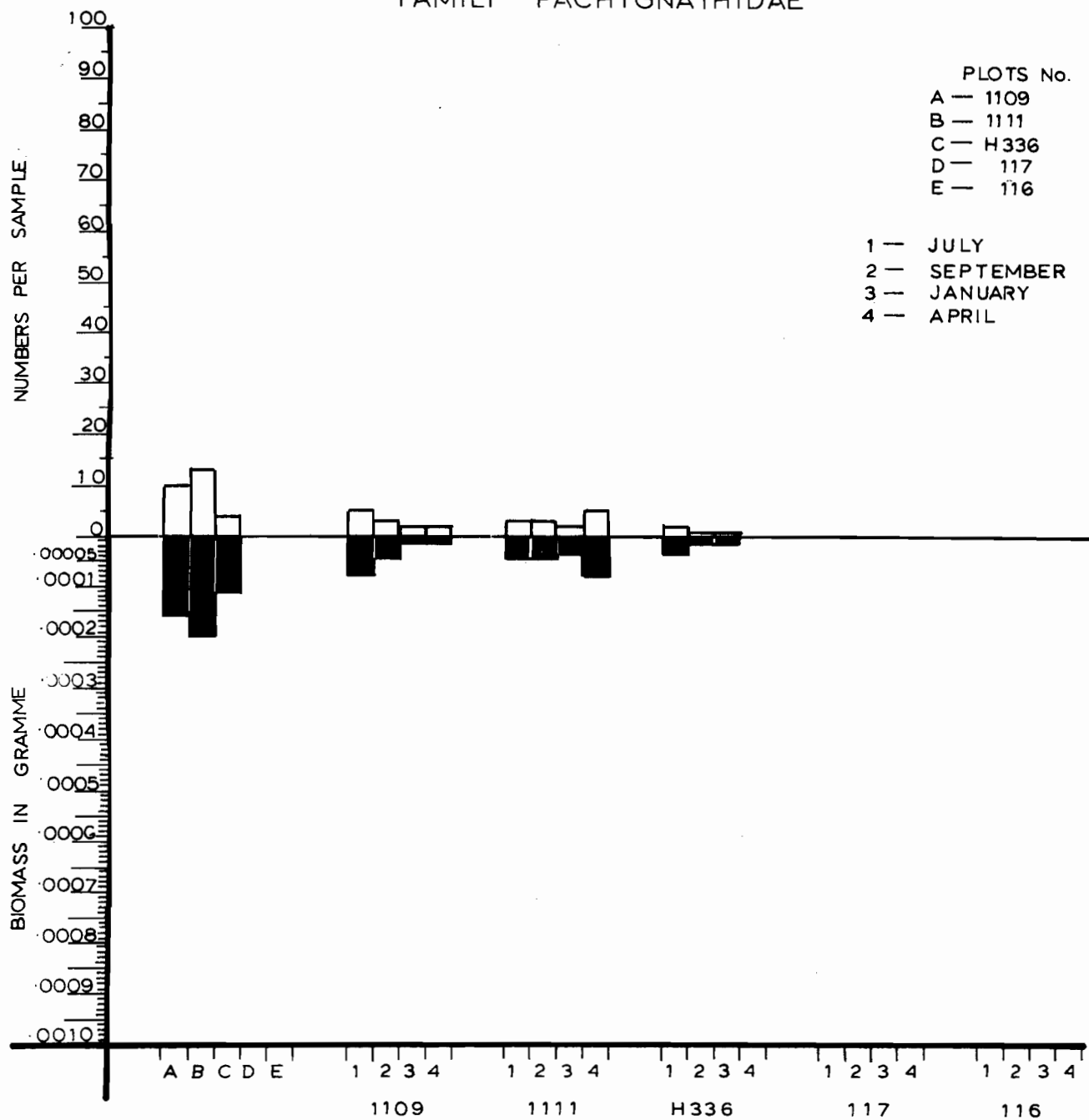


Fig. 19 Numbers and biomass plots A - E : Pachygnathidae.

6.32 Mesostigmata

Within the order Mesostigmata, six families were identified (tabel 21). Mesostigmate was, according to numbers and biomass, one of the smaller groups. The control plot had representatives of five families, which only contributed 26 mites or 1.136% of the mesofaunal numbers. The old citrus plot (B), on the other hand, had representatives of all six families, with a total of 93 mesostigmatic mites, which accounted for 4.877% of the total mesofaunal numbers, and 6.495% of the mesofaunal biomass. Plot C had five families, and plots D and E both four. The last mentioned three plots had totals of 19, 51 and 37 mites respectively.

RHODACARIDAE (fig. 20, table 21)

The Rhodacaridae which normally is a dominant family in most of the South African soils, attributed only one genus and species on the present investigation, namely Rhodacarus sublapideus (Ryke 1962c). The highest numbers attained were from the biological control plot, followed by the other three citrus routine plots namely E, B and C. The numbers were 24, 10, 6 and 2 respectively.

DIGAMASELLIDAE (tabel 21)

The few specimens found from the genus Digamasellus, were all from a new species, identified by Dr. G.O. Evans, during a visit to South Africa. No description of the particular mite has yet been done. On both plots A and B, only one specimen was recovered.

FAMILY RHODACARIDAE

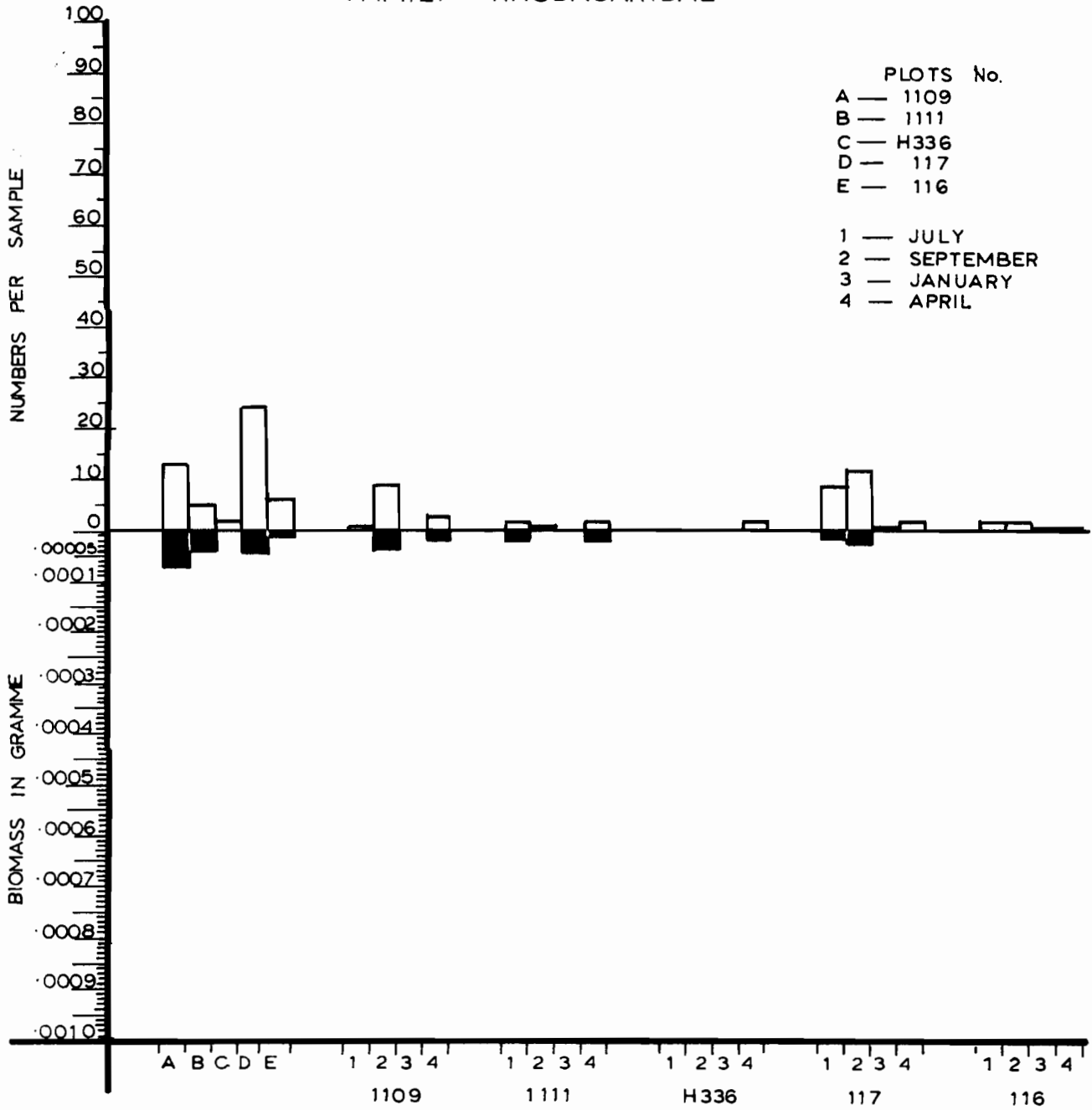


Fig. 20 Numbers and biomass plots A - E : Rhodacaridae.

LAELAPTIDAE (fig. 21, table 21)

The family Laelaptidae revealed a more or less even distribution through all the plots. The two genera and species found, Hypoaspis quinquelongisetosa (Ryke 1963) and Geolaelaps queenslandicus (Wom. comb. nov. Ryke, 1963) are common in South African soils.

PHYTOSEIIDAE (fig. 22, table 21)

The sole representative for this family was Amblyseius usitatus (Van der Merwe 1965). The mites were found in all five plots, but the biggest single contribution, however, occurred in January 1966 on plot B.

ASCIDAE (fig. 23, table 21)

The Ascidae consisted of a collection of three genera, namely Protogamasellus, Lasioseius and Gamasellodes. As a whole, this family made the biggest numerical contribution to Mesostigmata in general, but in relation to biomass, it was surpassed by the Pachylaelaptidae. From the genus Protogamasellus, three species were recorded, namely P. primitivus simulus (Genis & Ryke 1967), P. dispar (Genis & Ryke 1967) and P. brevicornis (Genis & Ryke 1967), but the single species of Gamasellodes and Lasioseius could not be determined.

PACHYLAELAPTIDAE (table 21)

This family suddenly made its appearance in the third

FAMILY LAELAPTIDAE

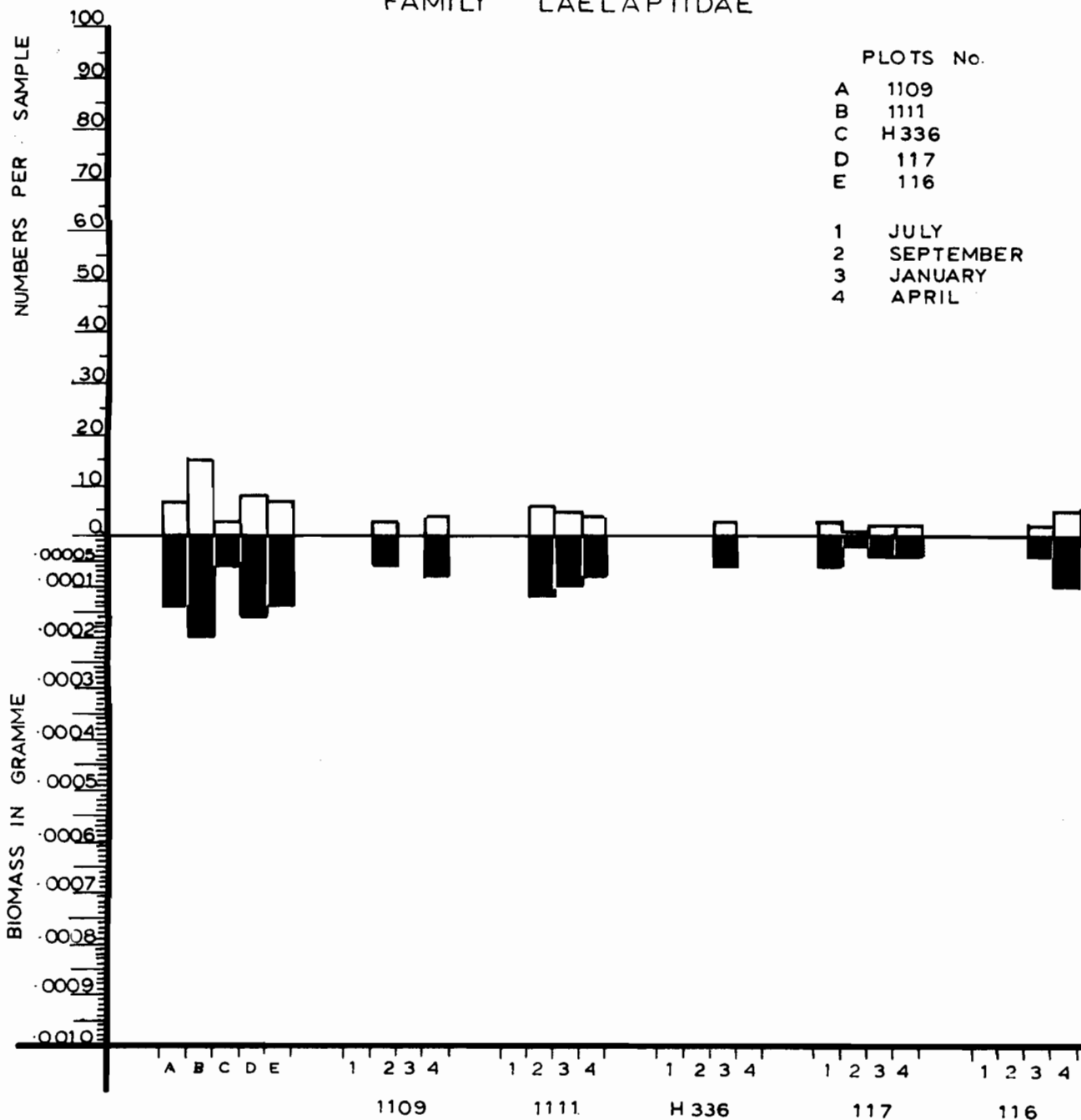


Fig. 21 Numbers and biomass plots A - E : Laelaptidae.

FAMILY PHYTOSEIIDAE

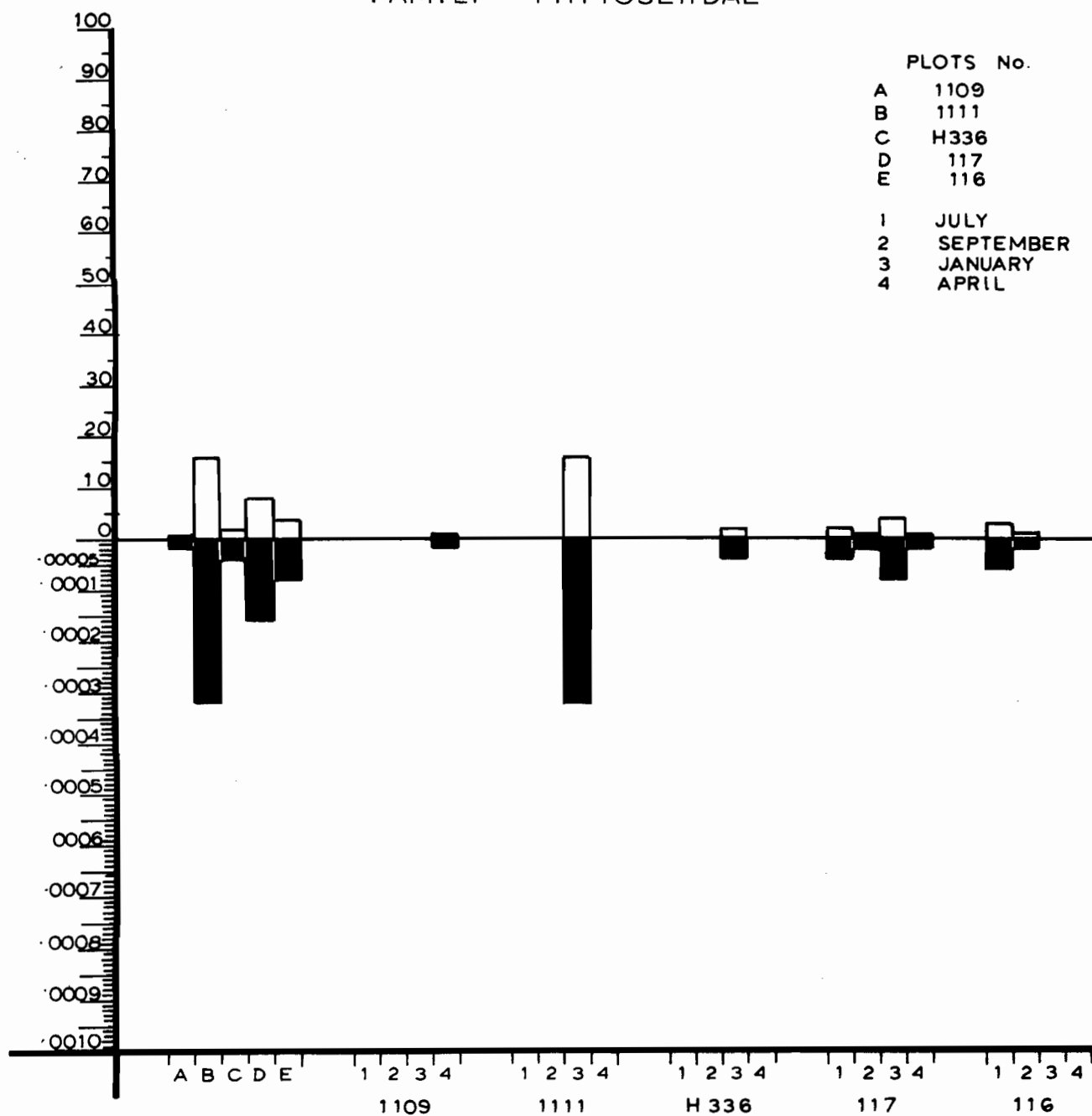


Fig. 22 Numbers and biomass plots A - E : Phytoseiidae.

FAMILY ASCIDAE

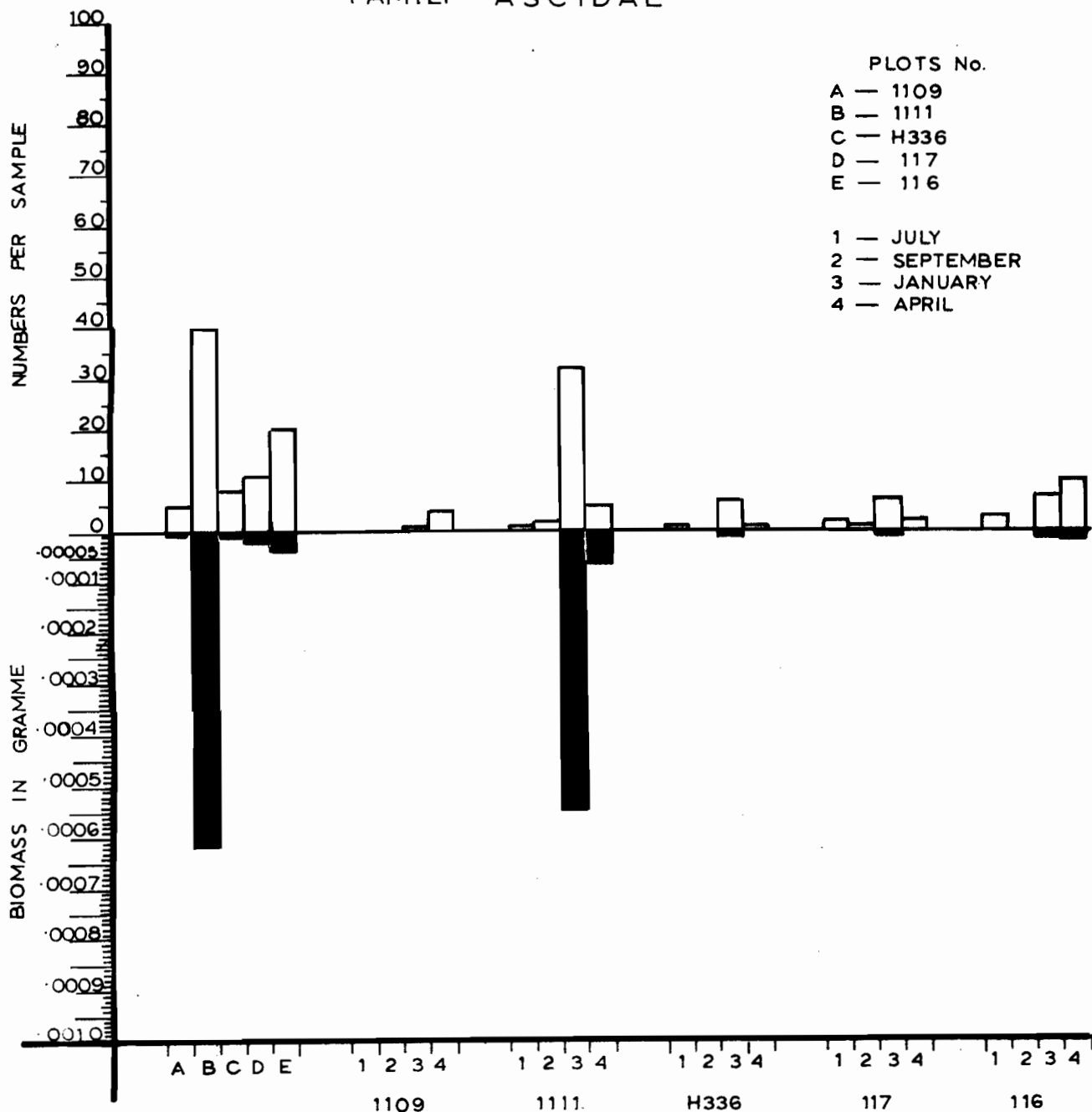


Fig. 23 Numbers and biomass plots A - E : Ascidae.

TABLE 20 NUMBERS AND BIOMASS VALUES, PLOTS A - E: FAMILIES OF TROMBIDIFORMES (CONTINUED)

TETRANYCHIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|-------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | 1 | .0000120 | 1 | .0000120 | 59.116 | | | | | | | | | |
| 1109 | | | | | | | | | | | | | | |

TABLE 21 NUMBERS AND BIOMASS VALUES, PLOTS A - E: FAMILIES OF MESOSTIGMATA

RHODACARIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|----------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 6 | .0000120 | 2 | .0000040 | 118.231 | 2 | .0000040 | 118.231 | 1 | .0000020 | 59.116 | 1 | .0000020 | 59.116 |
| 117 | 24 | .0000480 | 9 | .0000180 | 532.041 | 12 | .0000240 | 709.387 | 1 | .0000240 | 59.116 | 2 | .0000040 | 118.231 |
| H 336 | 2 | .0000040 | | | | | | | | | | 2 | .0000040 | 118.231 |
| 1111 | 4 | .0000240 | 2 | .0000020 | 118.231 | 1 | .0000020 | 59.116 | | | | 1 | .0000020 | 59.116 |
| 1109 | 10 | .0000180 | 1 | .0000020 | 59.116 | 8 | .0000140 | 472.924 | | | | 1 | .0000020 | 59.116 |

ASCIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|----------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 20 | .0000040 | 3 | .0000050 | | | | | 7 | .0000140 | 413.809 | 10 | .0000200 | 591.156 |
| 117 | 11 | .0000220 | 2 | .0000040 | 118.231 | 1 | .0000020 | 59.116 | 6 | .0000120 | 354.694 | 2 | .0000040 | 118.231 |
| H 336 | 8 | .0000160 | 1 | .0000020 | | | | | 6 | .0000120 | 354.694 | 1 | .0000020 | 59.116 |
| 1111 | 41 | .0000380 | 1 | .0000020 | 59.116 | 2 | .0000040 | 118.231 | 32 | .0005500 | 1891.699 | 6 | .0000020 | 354.694 |
| 1109 | 7 | .0000450 | | | | | | | 1 | .0000020 | 59.116 | 6 | .0000440 | 354.694 |

DIGAMASELLIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|-------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | 1 | .0000180 | 1 | .0000180 | | | | | 1 | .0000180 | 59.116 | | | |
| 1109 | 1 | .0000180 | | | | | | | | | | | | |

LABELLIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|----------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 7 | .0001400 | | | | | | | 2 | .0000400 | 118.231 | 5 | .0001000 | 295.578 |
| 117 | 8 | .0001600 | 3 | .0000600 | 177.347 | 1 | .0000200 | 59.116 | 2 | .0000400 | 118.231 | 2 | .0000400 | 118.231 |
| H 336 | 3 | .0000600 | | | | | | | 3 | .0000600 | 177.347 | | | |
| 1111 | 15 | .0003000 | | | | 6 | .0001200 | 354.694 | 5 | .0001000 | 295.578 | 4 | .0000800 | 236.463 |
| 1109 | 7 | .0001400 | | | | 3 | .0000600 | 177.347 | | | | 4 | .0000800 | 236.462 |

PHYTOSEIIDAE

| PLOTS | | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | APRIL 1966 | | |
|-------|-------|----------|-------|-----------|----------------------|-------|----------------|----------------------|-------|--------------|----------------------|------------|----------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 4 | .0000800 | 3 | .0000600 | 177.347 | 1 | .0000200 | 59.116 | | | | | | |
| 117 | 8 | .0001600 | 2 | .0000400 | 118.231 | 1 | .0000200 | 59.116 | | | | | | |
| H 336 | 2 | .0000400 | | | | | | | 4 | .0000800 | 236.463 | 1 | .0000200 | 59.116 |
| 1111 | 16 | .0003200 | | | | | | | 16 | .0003200 | 945.849 | | | |
| 1109 | 1 | .0000200 | | | | | | | | | | 1 | .0000200 | 59.116 |

and fourth sampling season. Of the 21 mites recovered, 4 were found in plot C and the rest in plot B. They all belonged to the same species, which happened to be a completely new one.

6.33 Oribatei

The Oribatei was the largest biomass contributor of the Acari, and the second best in relation to numbers. From the biomass and numbers comparison in fig. 9, it is obvious that the oribatid mites were per individual by far heavier than their trombidiform counterparts. In plot A, the Trombidiformes exhibited a larger total biomass value than the Oribatei, but that was only because the former's total numbers were so high.

Within the Oribatei, representatives of 9 families were recorded, of which 5 were only present in the plots of Section 3 B (table 22). They were: Lioididae, Plateremaeidae, Passalozetidae, Euphthiracaridae and Cosmochthoniidae. Of the remaining four families, the representatives of the Oribatulidae and Perlohmaniidae revealed a general distribution, while Oppiidae seemed to favour the soils of the citrus plots alone. The Epilohmanniidae attained their highest numbers in the plots on Section 2.

Of all the plots, the old citrus plot had the largest Oribatei numbers, with a total of 439 mites, which represented 23.020% of the total mesofaunal numbers and 23.275% of the total biomass value. The control plot (A) had a total

number of 247 Oribatei; collected during the sampling year, which equals 10.791% of the mesofaunal count, but only 3.798% of the total biomass values. The biological control plot equally had a 212 oribatid mites for the four sampling seasons, which had a numerical value of 11.870%, and a biomass value of 8.732%. Plots C and E had almost the same number of Oribatei, with totals of 157 and 159 respectively, but differed in that the former represented 14.030% of the total numbers and the latter only 6.642%.

ORIBATULIDAE (fig. 24, table 22)

The Oribatulidae was the dominant family of Oribatei; in numbers as well as in biomass. It was mainly in the citrus plots where they attained their highest numbers. All the mites were of the genus Scheloribates. Two undetermined species were recognised, which were referred to as: "Scheloribates sp. A" and "Scheloribates sp. B"

LIODIDAE (fig. 25, table 22)

As in the case of Oribatulidae, one genus was identified with two undetermined species, referred to as "Liodes sp. A" and "Liodes sp. B". Mites of this family were only found in plots A and B.

PLATEREMAEIDAE (fig. 26, table 22)

This family was represented by the two genera Plateremaeius and Pedrocorticella. The mites from the former genus

FAMILY ORIBATULIDAE

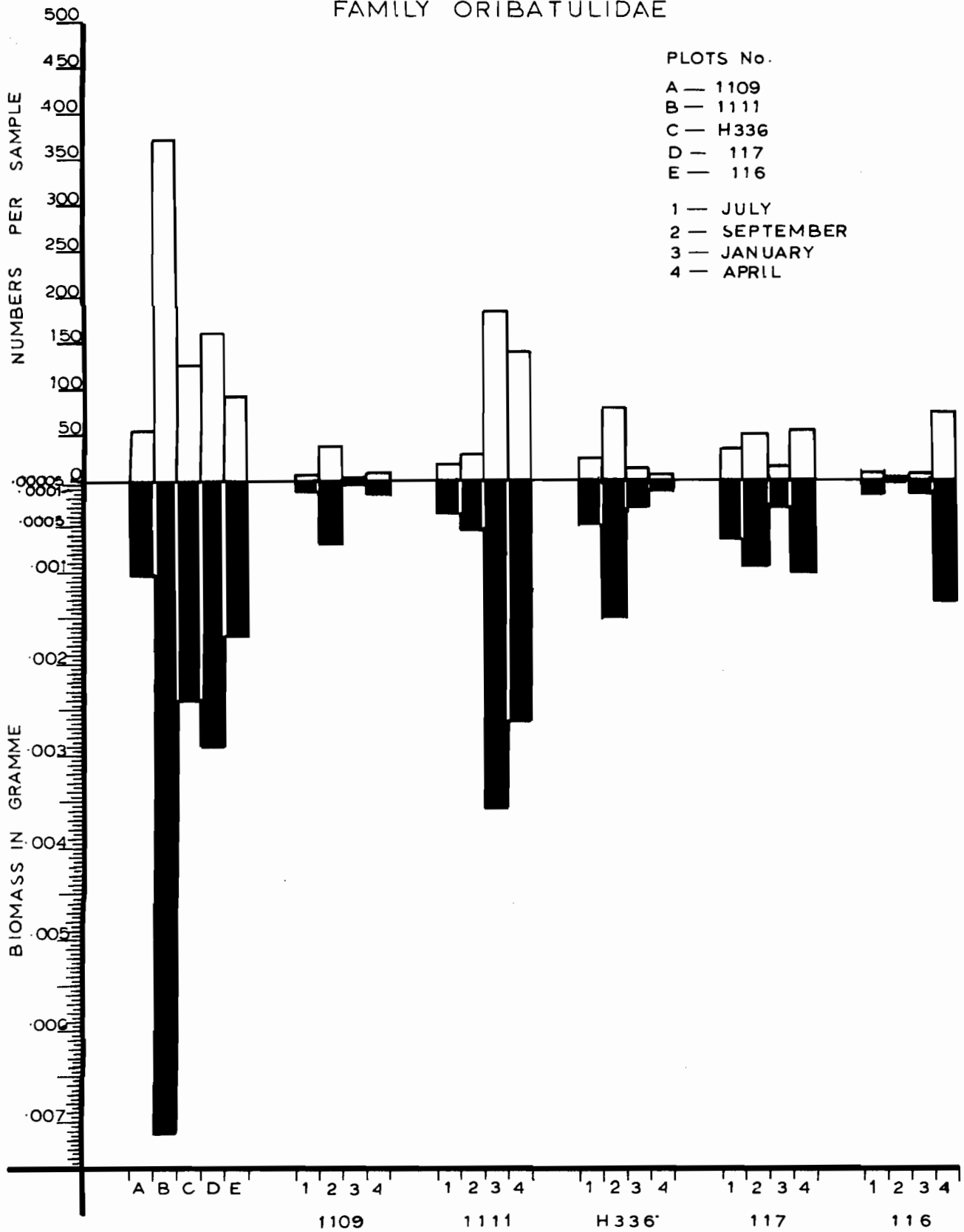


Fig. 24 Numbers and biomass plots A - E : Oribatulidae.

FAMILY LIODIDAE

PLOTS No.

- A 1109
- B 1111
- C H336
- D 117
- E 116

- 1 JULY
- 2 SEPTEMBER
- 3 JANUARY
- 4 APRIL

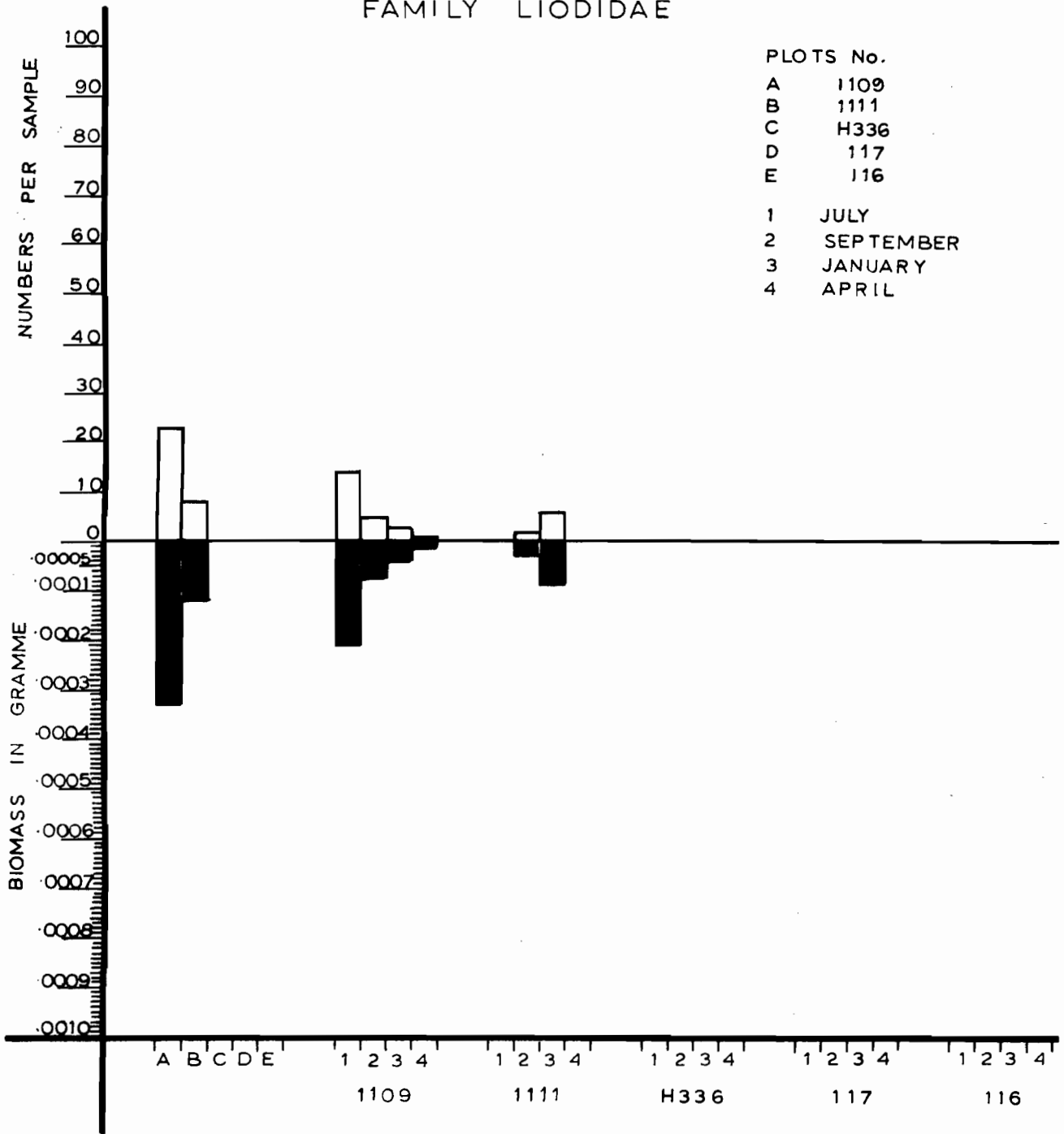


Fig. 25 Numbers and biomass plots A - E : Liodidae.

FAMILY PLATEREMAEIDAE

PLOTS No.

- A — 1109
- B — 1111
- C — H336
- D — 117
- E — 116
- 1 — JULY
- 2 — SEPTEMBER
- 3 — JANUARY
- 4 — APRIL

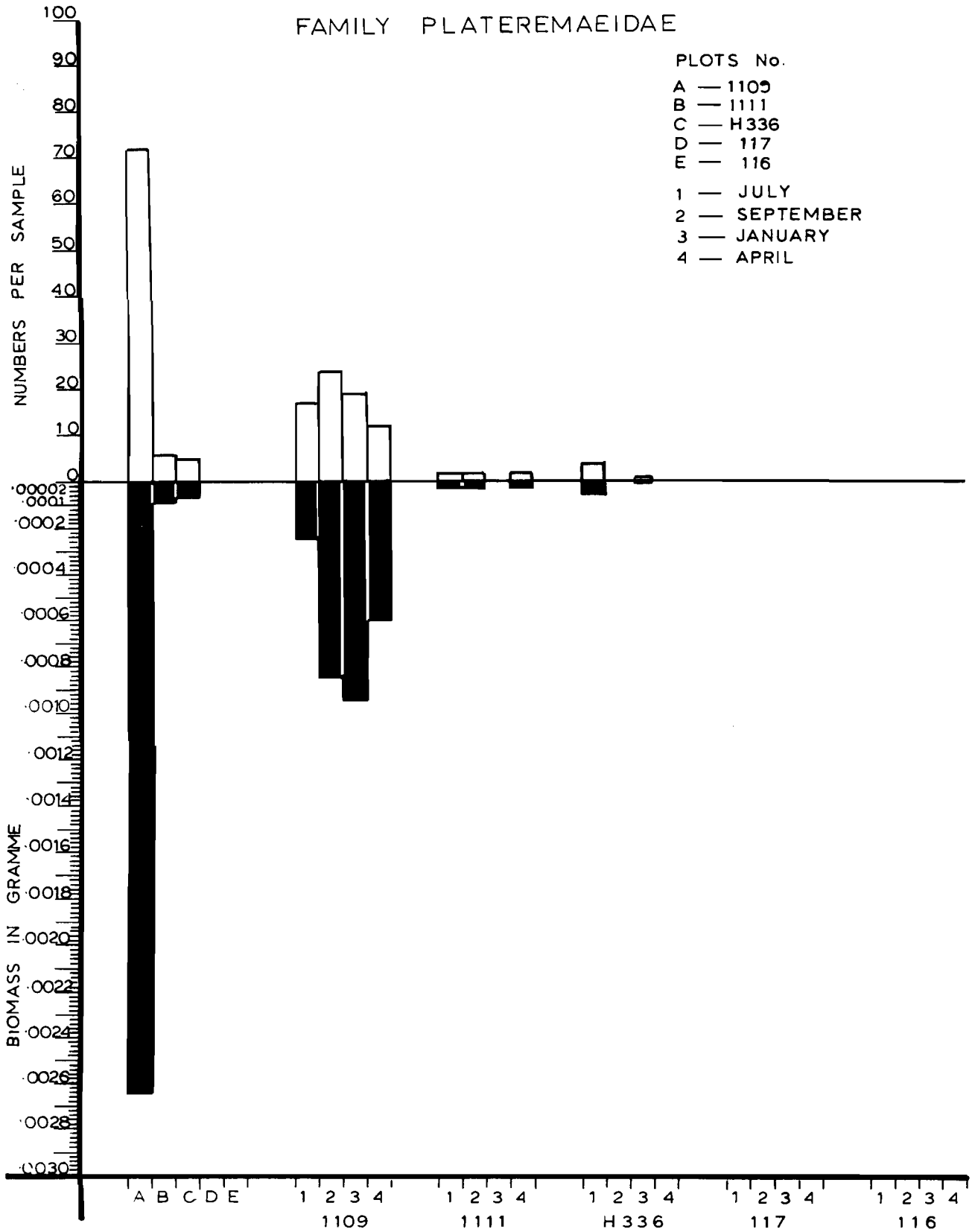


Fig. 26 Numbers and biomass plots A - E : Plateremaeidae.

were confined to the control plot. They were relatively big mites, in comparison with other Oribatei and made a considerable biomass contribution to this particular order. The name of the species was unknown.

The mites of the genus Pedrocorticella were only found in the three plots of Section 3 B, and had their highest concentration (27) in the control plot. They were all of the same species, which could not be determined.

PASSALOZETIDAE (fig. 27, table 22)

These mites were represented by the one genus Passalozetes and was restricted to the plots of Section 3 B. The specific name could not be identified. These mites were comparatively small and although fair numbers were counted, their biomass values were small.

EUPHTHIRACARIDAE (table 22)

The three mites representing this family were all of the genus Rhyzotritia, and were restricted to plot A.

COSMOCHTHONIIDAE (table 22)

As in the case of the last mentioned family, these mites occurred in the control plot only. All twelve of the individuals belonged to the genus Cosmochthonius. The species was unknown, but related to the species C. lanatus (Mich.)

FAMILY PASSALOZETIDAE

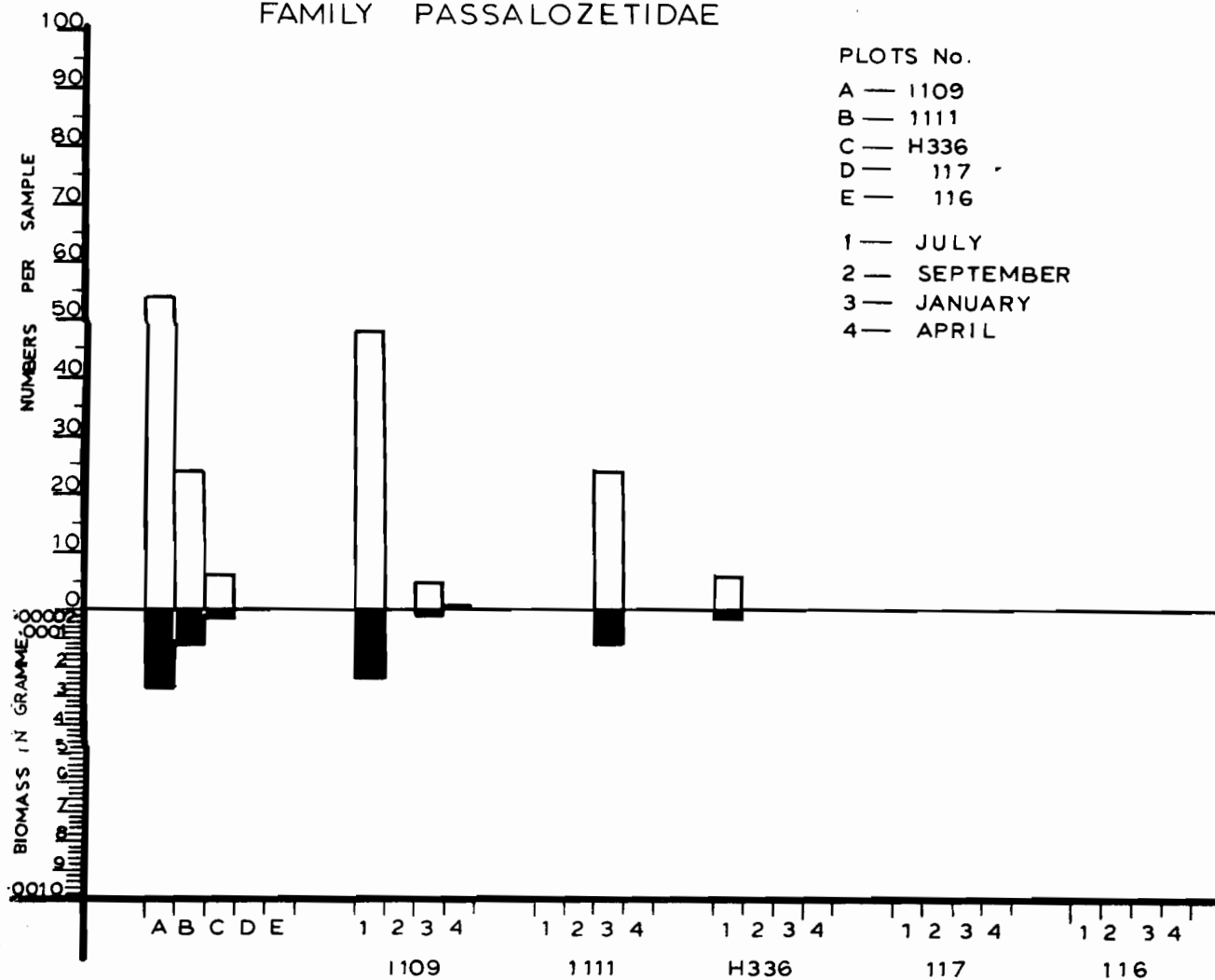


Fig. 27 Numbers and biomass plots A - E : Passalozetidae.

TABLE 21 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF MESOSTIGMATA (CONTINUED)

| PACHYLAEALPTIDAE | | | | | | | | | | | | | | |
|-------------------------------------|---------|----------------------|-----------|-------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 4 17 | .0002000 .0008500 | | | | 3 | .0001500 | 177.347 | 1 | .0000500 | 59.116 | 17 | .0008500 | 1004.965 |

TABLE 22 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF ACARIDAE

| ACARIDAE | | | | | | | | | | | | | | |
|-------------------------------------|-------------------|--|--------------|----------------------------------|------------------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 24 3 8 7 | .0002880 .0000420 .0001120 .0000860 | 11 1 8 | .0001060 .0000140 .0001120 | 650.271 59.116 472.924 | 9 | .0001260 | 532.040 | 2 | .0000280 | 118.231 | 4 | .0000560 | 236.463 |
| | | | | | | 1 | .0000140 | 59.116 | 4 | .0000560 | 236.463 | 2 | .0000160 | 118.231 |

TABLE 23 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF ORIBATEI

| COSMOCHTHONIIDAE | | | | | | | | | | | | | | |
|-------------------------------------|-------|----------|-----------|----------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|-------|----------------------|
| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 12 | .0000600 | 1 | .0000050 | 59.116 | 1 | .0000050 | 59.116 | 10 | .0000500 | 591.156 | | | |

EUPHTEIRACARIDAE

| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|-------|----------|-----------|-------|----------------------|----------------|----------|----------------------|--------------|-------|----------------------|------------|----------|----------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 3 | .0003000 | | | | 1 | .0001000 | 59.116 | | | | 2 | .0002000 | 118.231 |

PERLOHMANNIIDAE

| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|------------------------|--|--------------|----------------------------------|-------------------------------|----------------|----------|----------------------|--------------|----------------------|----------------------|------------------|--|--|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 6 8 6 5 21 | .0000900 .0001200 .0000900 .0000700 .0003150 | 6 2 13 | .0000900 .0000300 .0001950 | 354.694 118.231 768.503 | 7 | .0001050 | 413.809 | 2 7 | .0000300 .0001050 | 118.231 413.809 | 4 1 3 1 | .0000600 .0000150 .0000450 .0000150 | 236.462 59.116 177.347 59.116 |

EPILOHMANNIIDAE

| PLOTS TOTAL | | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|---------------|----------------------------------|-----------|----------------------|----------------------|----------------|----------------------|----------------------|--------------|----------------------------------|-------------------------------|---------------|----------------------------------|------------------------------|
| No. | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 43 34 3 | .0005160 .0004080 .0000360 | 11 4 | .0001320 .0000480 | 650.271 236.463 | 5 14 | .0000600 .0001680 | 295.578 827.618 | 11 5 2 | .0001320 .0000600 .0000240 | 650.271 295.578 118.231 | 16 11 1 | .0001920 .0001320 .0000120 | 946.496 650.271 59.116 |

OPPIIDAE (fig. 28, table 22)

The species which represented this family, was Oppia nova described by Oudemans. They are small mites and were found in all four citrus plots, but not in the control plot.

PERLOHMANNIIDAE (fig. 29, table 22)

These particular mites had a general distribution. They were completely unknown to the specialists, with the result that not even their generic name could be identified.

EPILOHMANNIIDAE (fig. 30, table 22)

These mites all belonged to the genus Epilohmannia. No specific name could be mentioned. They attained the highest numbers on plots D and E.

CARABIDIDAE (table 22)

Only one specimen of this family was extracted. It was found on plot E. As in the case of Perlohmanniidae, it was unsafe even to apply a generic name.

LARVAE UNIDENTIFIED (table 22)

A small group of oribated larvae, could not be identified.

FAMILY OPPIIDAE

PLOTS No.

A — 1109
 B — 1111
 C — H336
 D — 117
 E — 116

1 — JULY
 2 — SEPTEMBER
 3 — JANUARY
 4 — APRIL

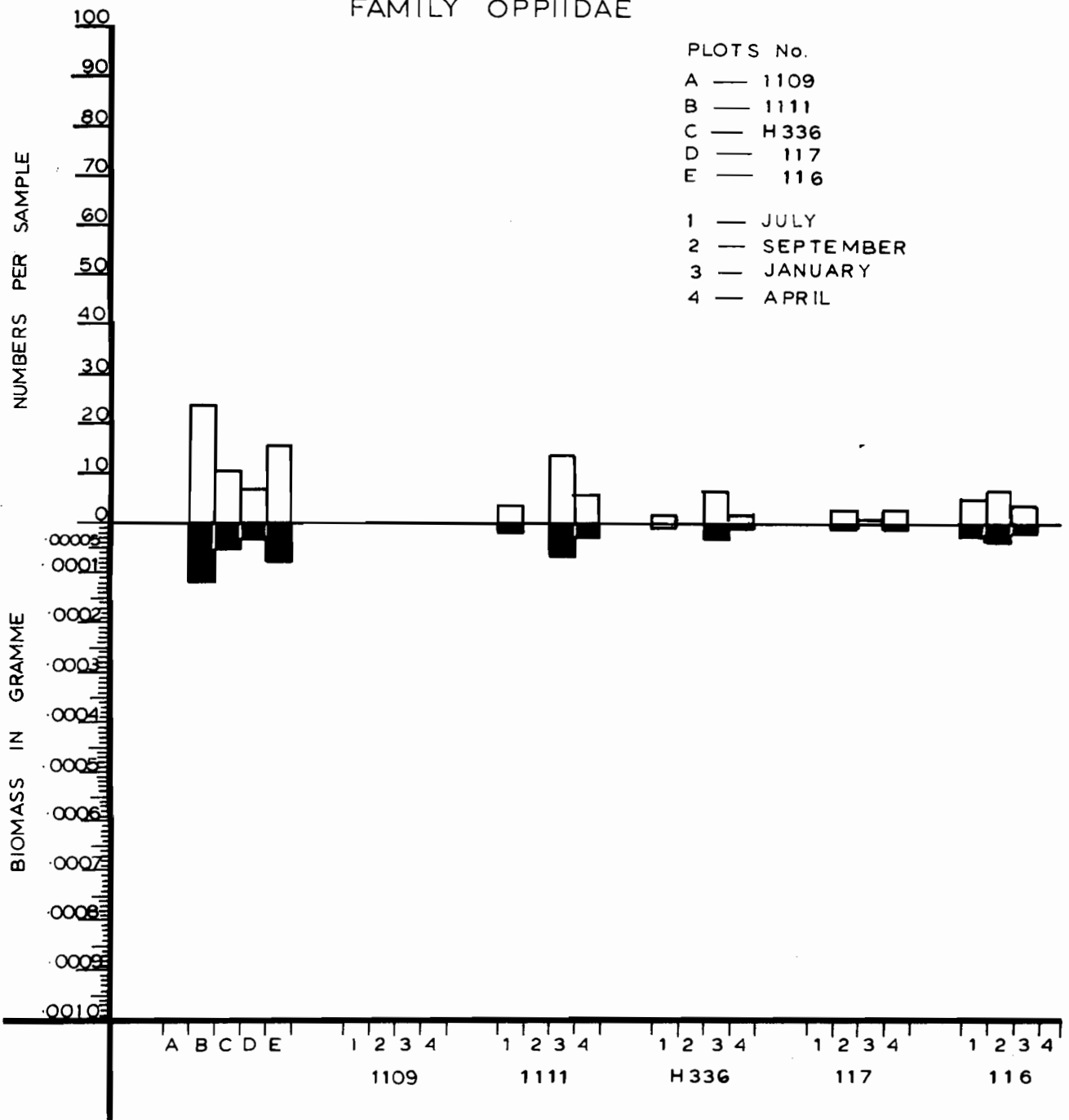


Fig. 28 Numbers and biomass plots A - E : Oppiidae.

FAMILY PERLOMANNIIDAE

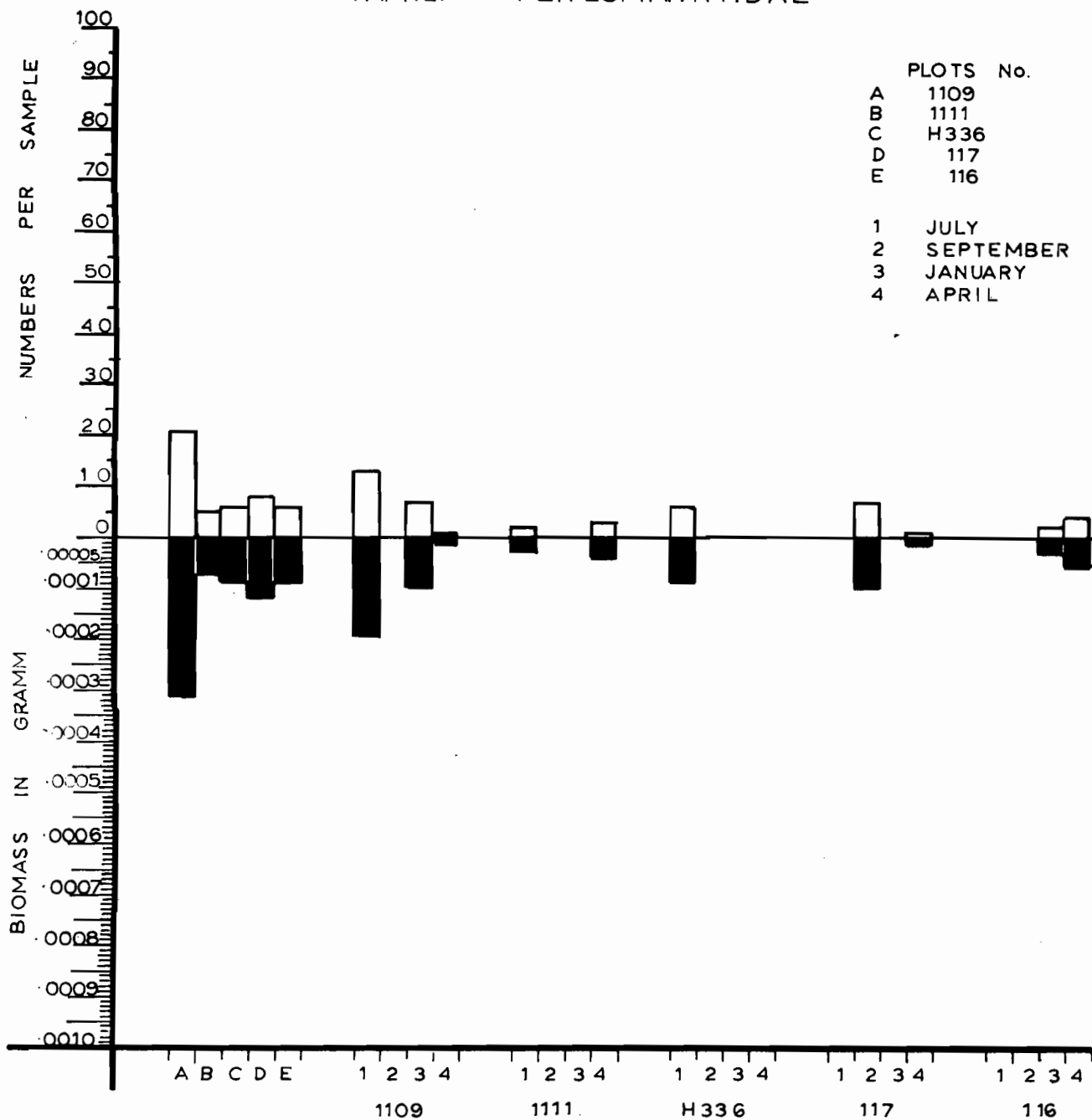


Fig. 29 Numbers and biomass plots A - E : Perlomanniidae.

FAMILY EPILOHMANNIIDAE

PLOTS No.

A 1109
 B 1111
 C H336
 D 117
 E 116

1 JULY
 2 SEPTEMBER
 3 JANUARY
 4 APRIL

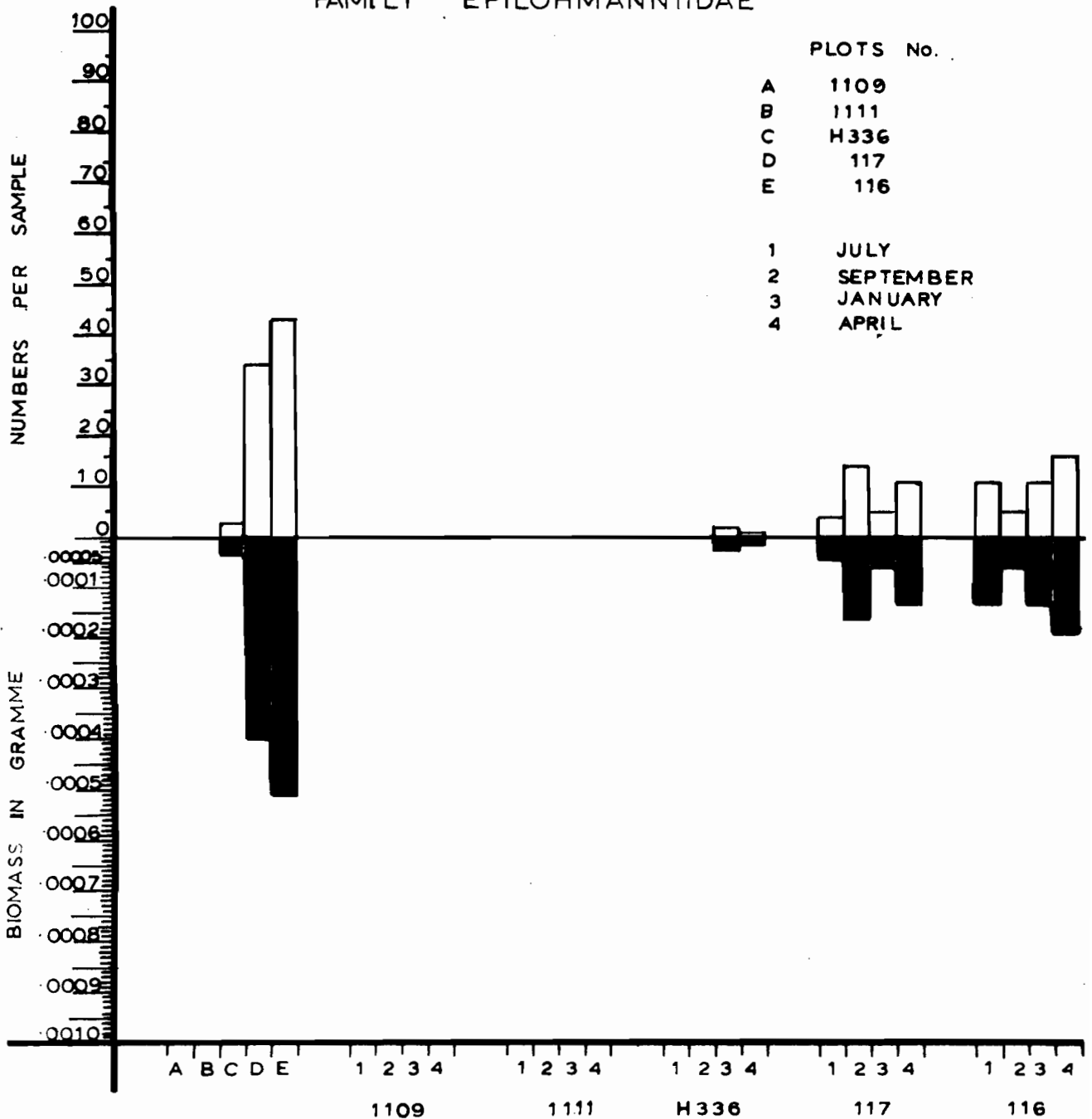


Fig. 30 Numbers and biomass plots A - E : Epilohmanniidae.

6.34 Acaridiae (fig. 31, table 23)

The Acaridiae was one of the smallest groups with only one representative family, namely Ocaridae. For this family, the genus Tyrophagus was the sole representative. The species was unknown. The highest mesofaunal total of 24 mites was recorded for plot D.

6.4 ANALYSIS OF THE "OTHER ARTHROPODA"

The arthropods, other than the Acari without doubt a dominant group of the mesofauna. In all five plots this section was the major biomass contributor, as well as the best numerical contributor to plots C, D and E.

The biggest biomass and numerical contributor of the "Other Arthropoda" section of plot A was the Class Diplopoda, which attributed 64.074% of the total mesofaunal biomass, as well as 5.417% of the total mesofaunal numbers. This group was followed by a variety of soil insects which made smaller, but important contributions, to the biomass as well as the numerical values of this particular plot (table 24).

In all the citrus plots, Collembola was the dominant order of the "Other Arthropoda", but whereas these insects represented the dominant group for both biomass and numbers for the whole mesofaunal collection of all the other citrus plots, the Acari attained a dominant numerical position and a good part of the total biomass values in plot B.

FAMILY ACARIDAE

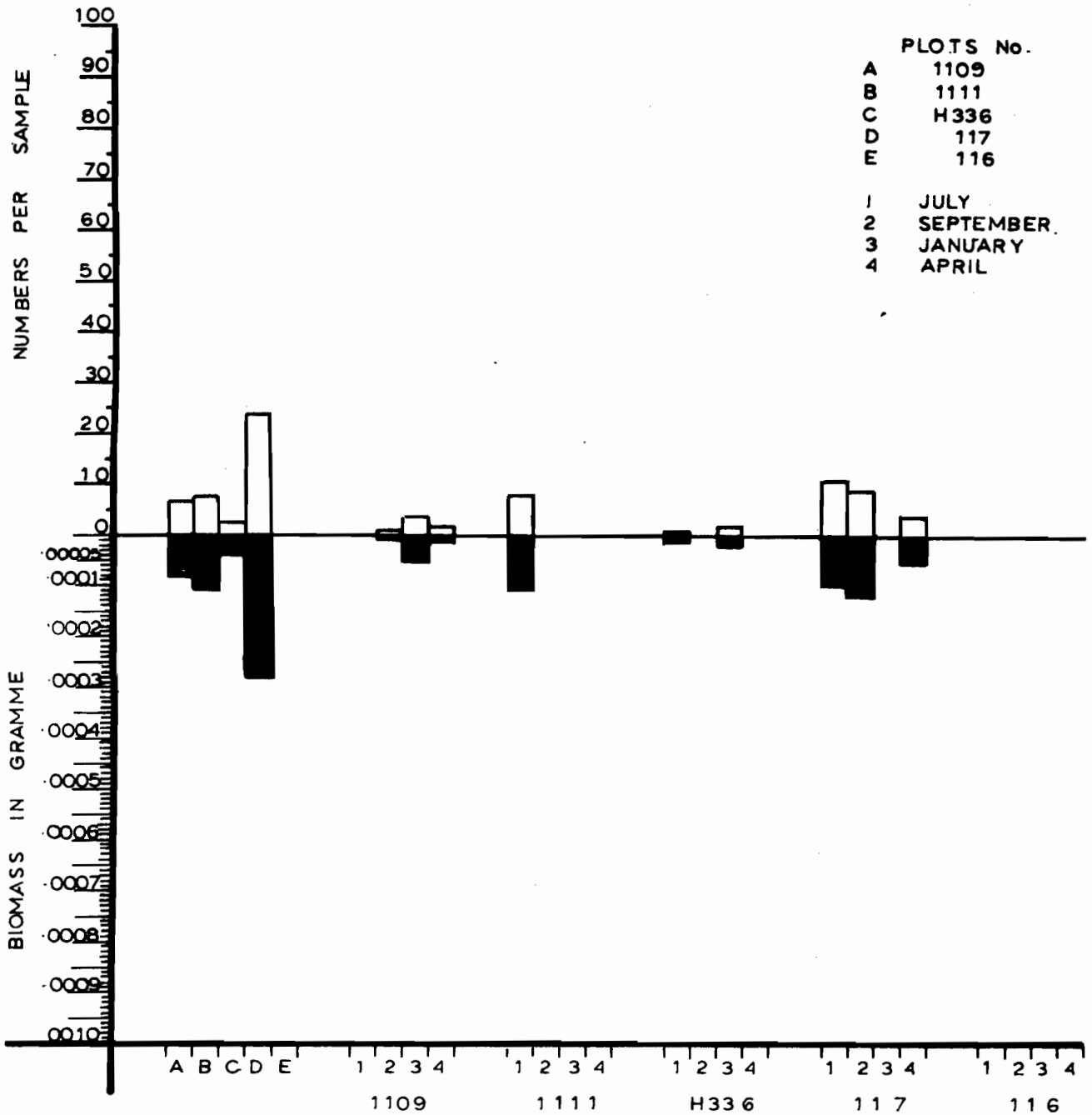


Fig. 31 Numbers and biomass plots A - E : Acaridiae.

CLASS INSECTA

Within this class, ten insect orders were recorded of which all were generally known to possess soil insects. The Collembola was the most prominent order but in reference to numbers, the Corrodentia attained an outstanding position in the control plot, where the Collembola was a minor order.

ORDER : COLLEMBOLA

Five families were recognised in this order. From the family Onychiuridae (fig. 32), the species Onychiurus camerunensis (Schött, 1926) has been recorded. It was found on all the plots and made major contributions in the citrus plots. The species Isotomina termophila (Axelson, 1900), from the Isotomidae (fig. 33) were also represented in all five plots and could be considered as the dominant collembolan species. The family Achorutidae (fig. 34) was represented by the species Brachystomella parvula (Schaeffer 1896) which only occurred in the two plots of Section 2. The peak population was recorded on plot D. The family Entomobryidae had the two species Seira squamoornata (Schtscherbakov 1898) (Lepidocyrtinus sp. and Entomobrya sp. Both species only occurred in the control plot. The species Sphaeridia pumilis (Krausb. 1898) was recorded for the family Sminthuridae on plots A and E.

ORDER : DIPLURA (fig. 35, table 24)

The sole representative family for this order was Ja-

TABLE 23 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF ORIBATEI (CONTINUED)

| PLOTS No. | TOTAL | | JULY 1965 | | | LARVAE UNKNOWN SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|--------|----------------------|-----------|-------|----------------------|----------------------------------|-------|----------------------|--------------|-------|----------------------|------------|----------------------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 1 6 | .0000030 .0000180 | | | | | | | | | | 1 6 | .0000030 .0000180 | 59.116 354.694 |

TABLE 24 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF 'OTHER ARTHROPODA'

| PLOTS No. | TOTAL | | JULY 1965 | | | ISOTOMIDAE SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|---------------------------------|--|-----------|----------------------|----------------------|------------------------------|--|---|---------------------------------|--|---|---------------------|--|---|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 115 117 H 336 1111 1109 | 1947 495 537 255 30 | .0681450 .0173250 .0187950 .0089250 .0010500 | 26 18 | .0009100 .0006300 | 1537.005 1054.080 | 5 13 3 6 10 | .0001750 .0004550 .0001050 .0002100 .0003500 | 295.578 768.502 177.347 354.694 591.156 | 1421 421 531 227 14 | .0521850 .0147350 .0185850 .0079450 .0004900 | 88141.359 24887.667 31390.383 13419.241 827.618 | 425 43 3 4 | .0148750 .0015050 .0001050 .0001400 | 25124.130 2541.970 177.347 236.462 |

ONYCHIURIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|----------------------------|--|-------------|----------------------------------|-------------------------------|-------------------|--|---|--------------------------|--|---|--------------------------|--|--|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 115 117 H 336 1111 1109 | 69 94 52 37 26 | .0013800 .0018800 .0012400 .0007400 .0005200 | 3 2 4 | .0000600 .0000400 .0000800 | 177.347 118.231 235.462 | 3 7 27 3 | .0000600 .0001400 .0005400 .0000600 | 177.347 413.809 1535.121 177.347 | 22 46 52 1 2 | .0004400 .0009200 .0010400 .0000200 .0000400 | 1300.543 2719.317 3074.011 59.116 177.347 | 41 41 8 5 21 | .0008200 .0008200 .0001600 .0001000 .0004200 | 2423.739 2423.739 472.924 295.578 1241.427 |

ACHORUTIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|---------------|----------------------------------|-----------|-------|----------------------|----------------|-------|----------------------|--------------|----------------------|----------------------|------------|----------------------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 8 354 2 | .0002400 .0196200 .0000600 | | | | | | | 333 2 | .0099900 .0000600 | 19685.494 118.231 | | .0002400 .0006300 | 472.924 1241.427 |

ENTOMOBRYIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|-------|----------|-----------|-------|----------------------|----------------|-------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 9 | .0001440 | | | | | | | 8 | .0001280 | 472.924 | | .0000160 | 59.116 |

SMINTHURIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-------------------------------------|--------|----------------------|-----------|-------|----------------------|----------------|----------|----------------------|--------------|-------|----------------------|------------|----------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 117 H 336 1111 1109 | 1 6 | .0000040 .0000240 | | | | 1 | .0000040 | 59.116 | | | | 6 | .0000240 | 354.694 |

FAMILY ONYCHIURIDAE

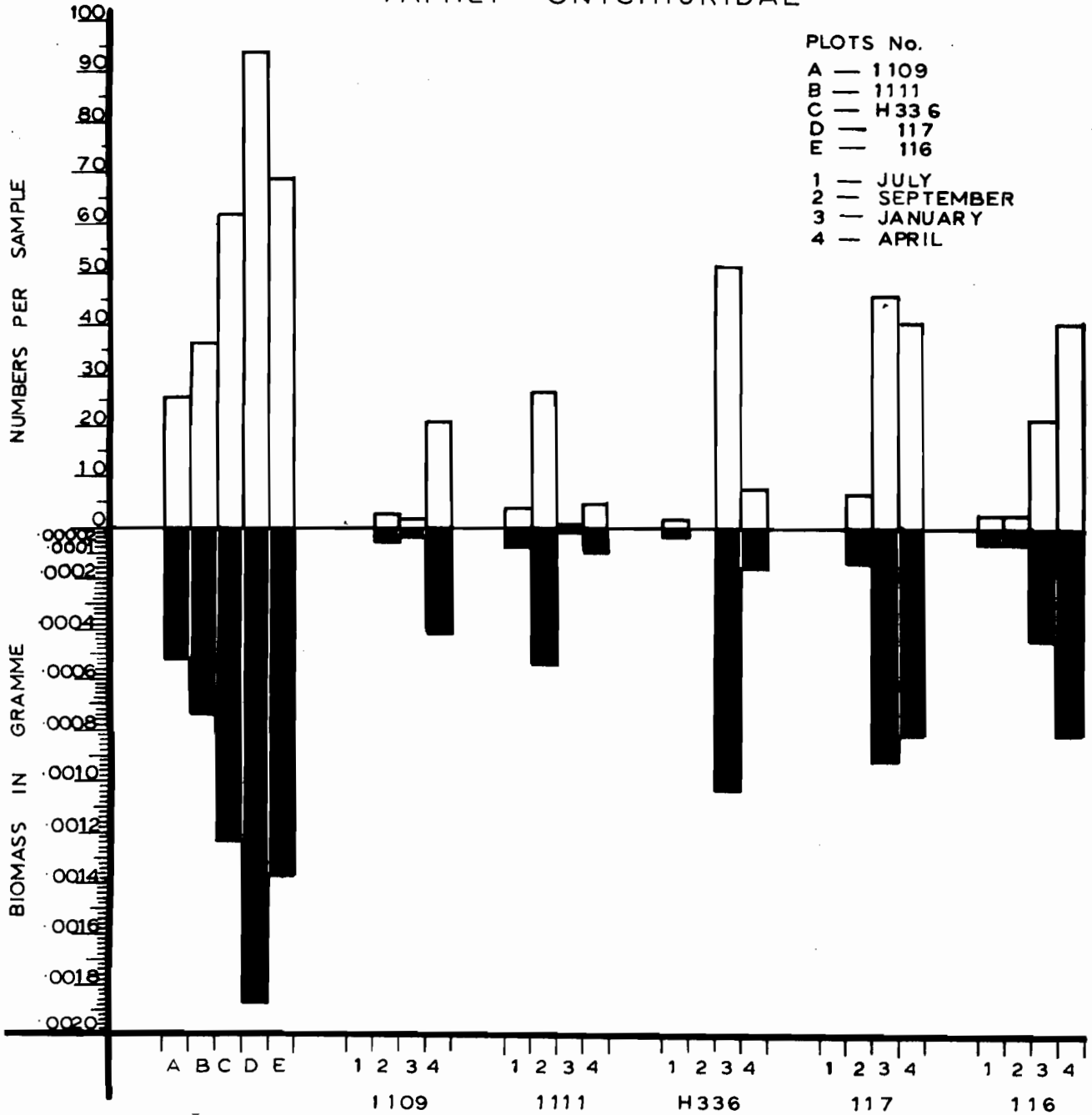


Fig. 32 Numbers and biomass plots A - E : Onychiuridae.

FAMILY ISOTOMIDAE

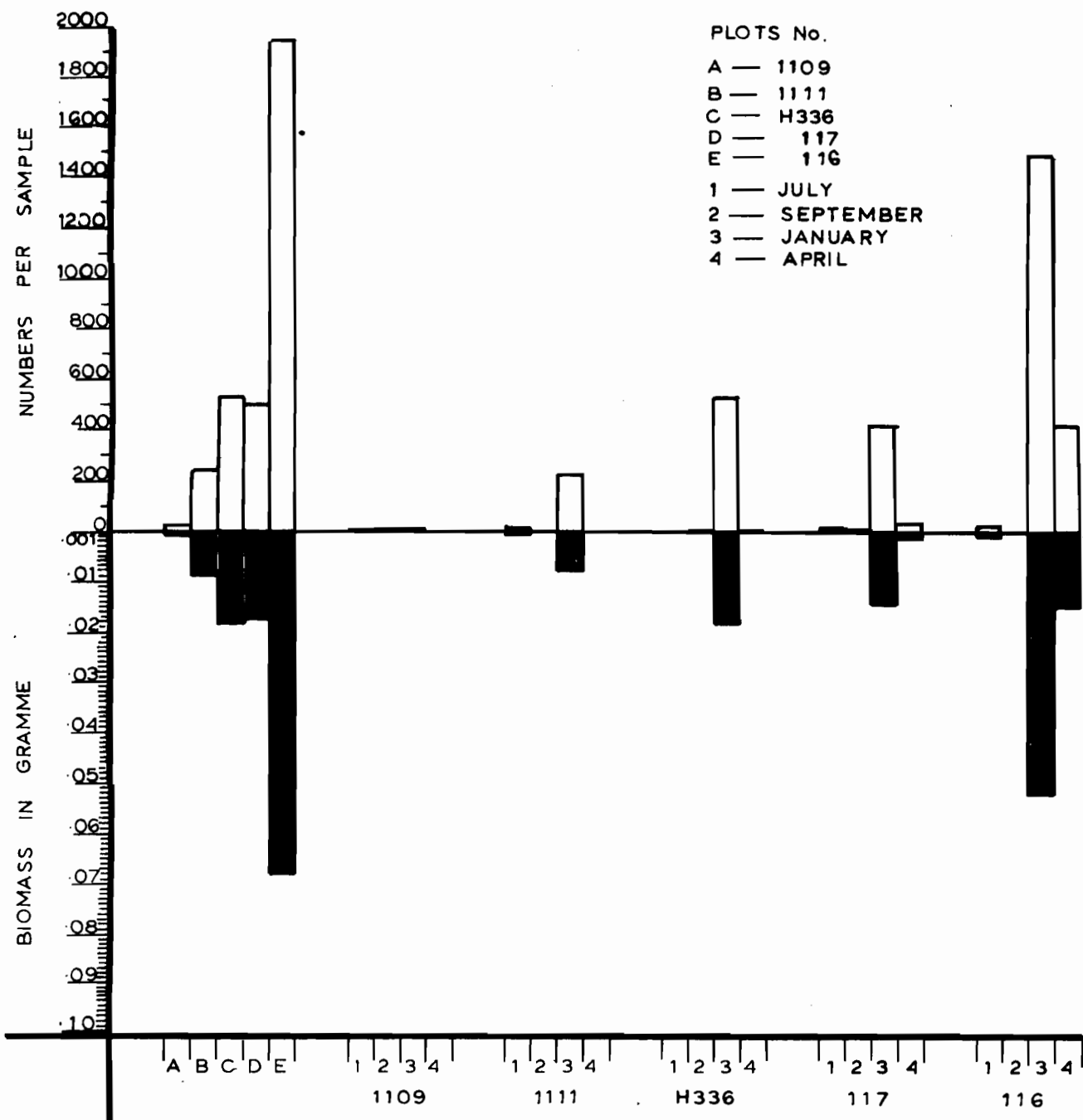


Fig. 33 Numbers and biomass plots A - E : Isotomidae.

FAMILY ACHORUTIDAE

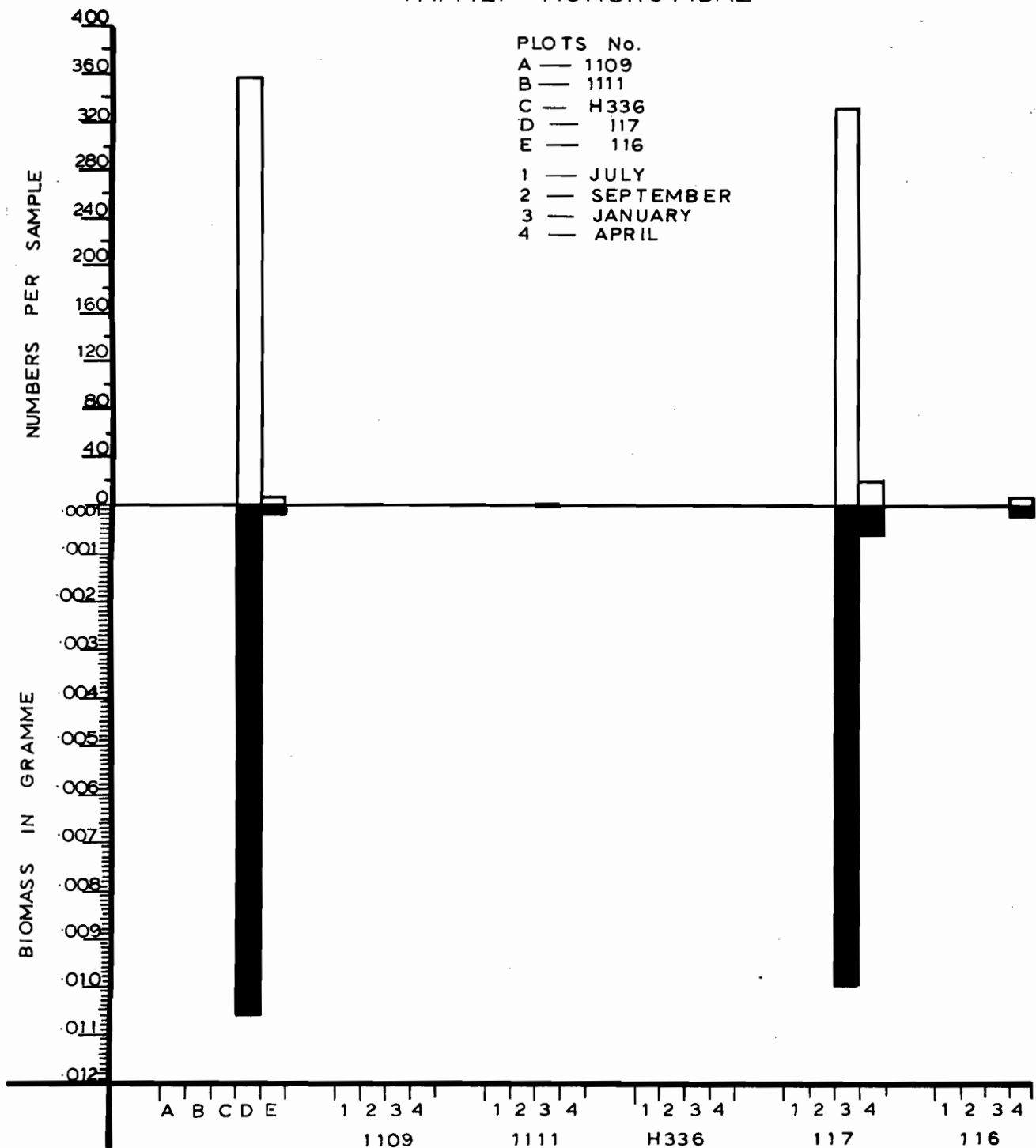


Fig. 34 Numbers and biomass plots A - E : Achorutidae.

FAMILY JAPYGIDAE

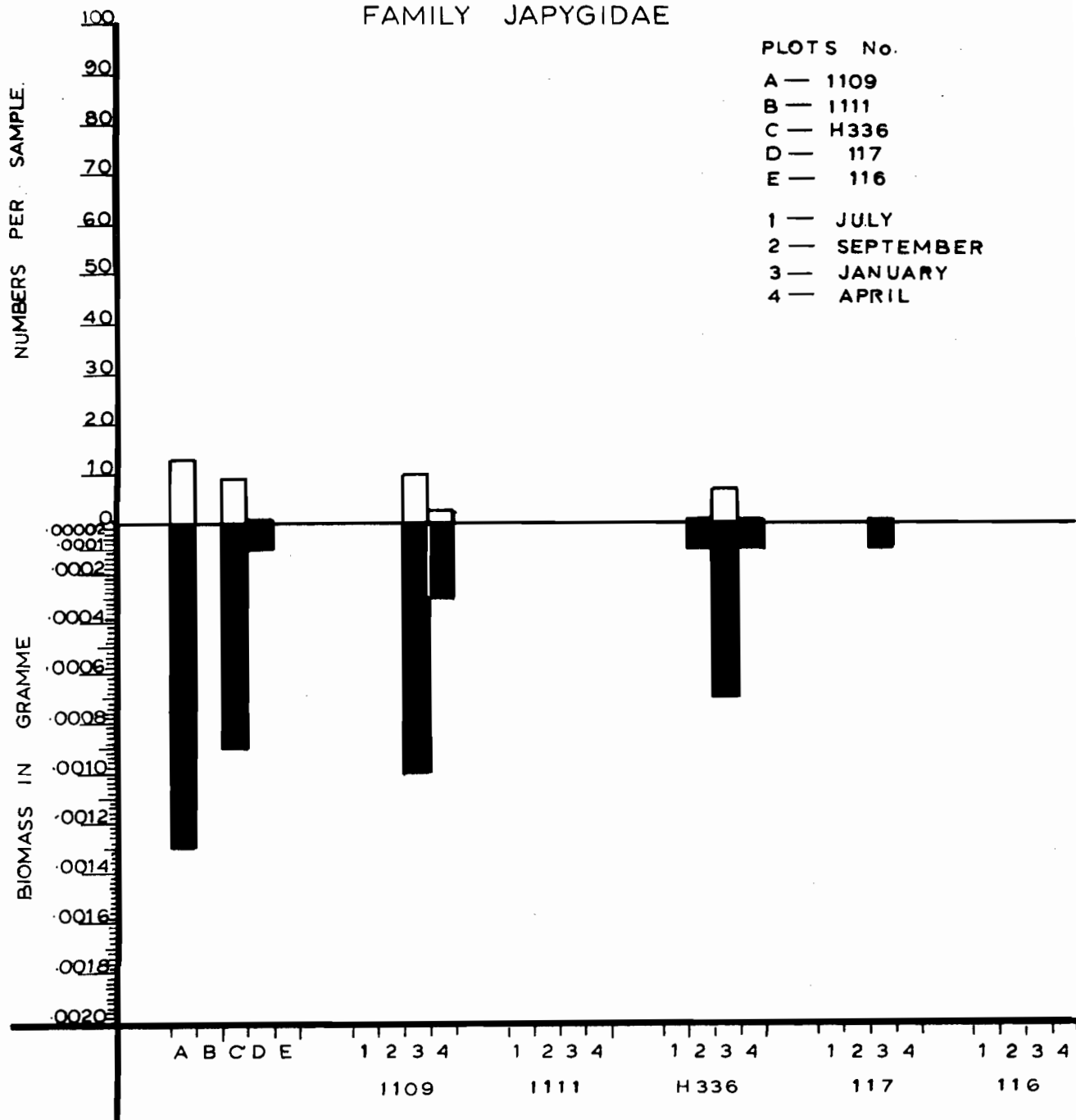


Fig. 35 Numbers and biomass plots A - E : Japygidae.

pygidae. Only one unknown species was recorded. Specimens were found on plots A, C and D. The highest number was recorded at the control plot. They are true soil dwellers and it probably has a general distribution throughout the Zebediela soils.

ORDER : CORRODENTIA (fig. 36, table 24)

The corrodentians were comparatively numerous in the control plot. Just one species was recognised, but it was only possible to identify the family named Liposcellidae.

ORDER : HEMIPTERA

The most general representative of this family was a species from Reduviidae. From the family Isometopidae two specimens of Letaba bedfordi (Hesse, 1948) were recorded.

ORDER : HOMOPTERA (table 24)

The aphids (Aphididae) were represented by a few specimens of the genus Macrosiphum. No specific name could be applied. From the family Coccidae, the few specimens obtained were all immature stages, with the result that the specialists were unable even to apply a generic name.

ORDER : THYSANOPTERA (fig. 37, table 24)

The two species Urothrips minor (Faure) and Faureothrips reticulatus (Tribom), both belong to the family Phlaeothripidae.

FAMILY LIPOSCCELLIDAE

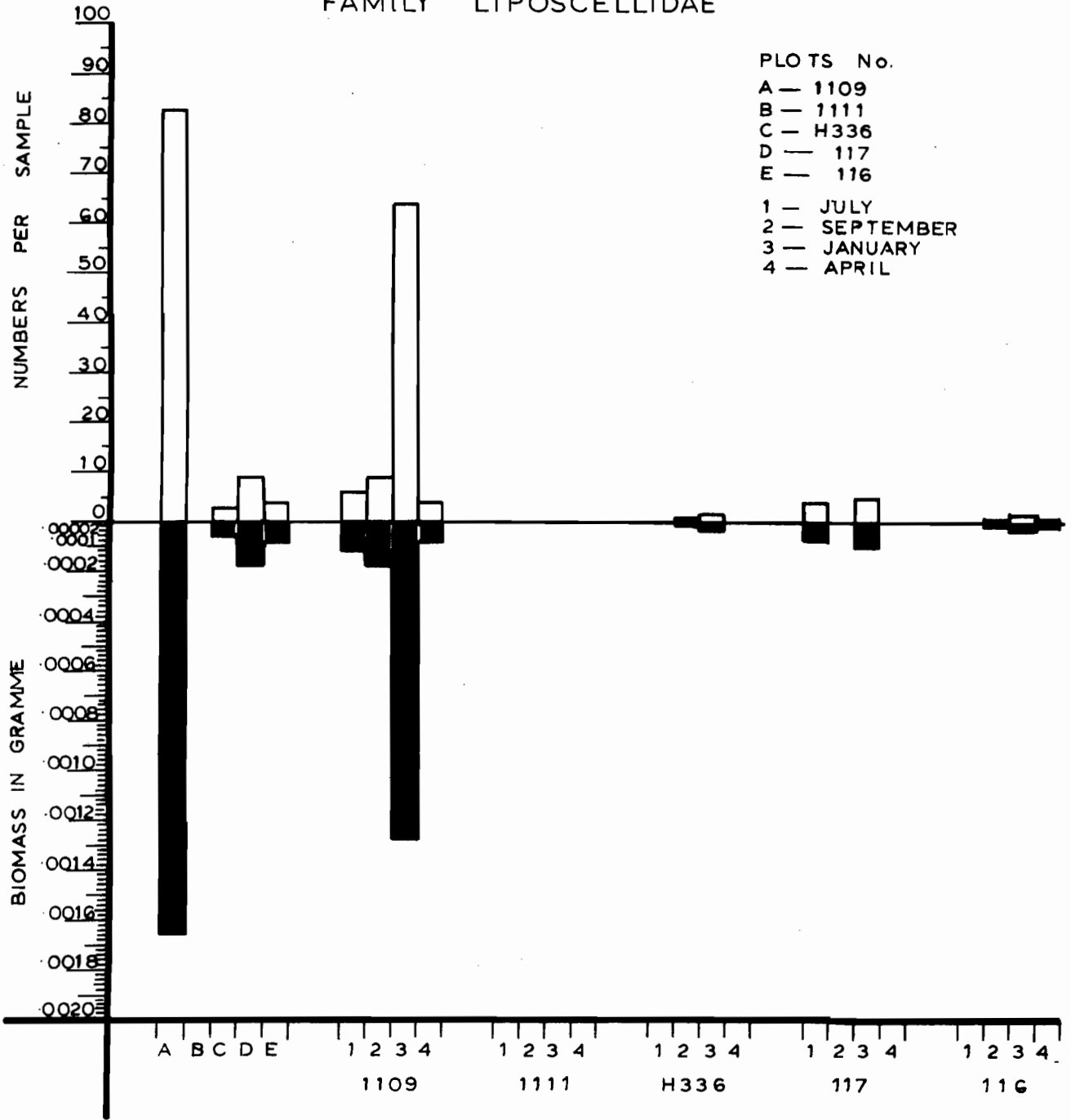


Fig. 36 Numbers and biomass plots A - E : Liposcellidae.

FAMILY PHLAETHRIPIDAE

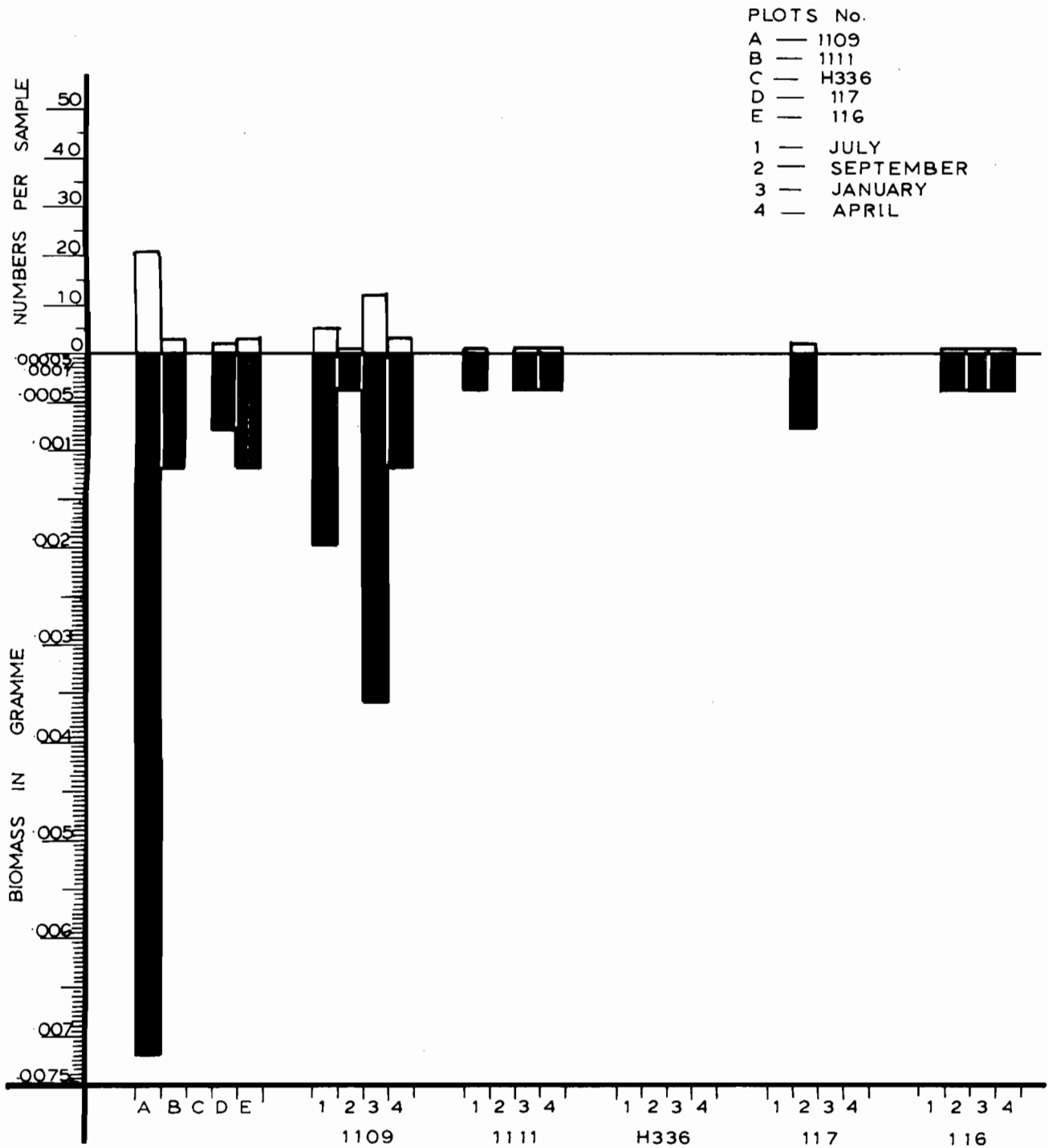


Fig. 37 Numbers and biomass plots A - E : Phlaeothripidae.

The former was the main representative, as only 2 specimens were recorded of the latter species. The highest numbers occurred at the control plot.

ORDER : LEPIDOPTERA (fig. 38, table 24)

This order was registered by the coincidental occurrence of the army worm, Lapygma exempta (Walk.) on plots B and C which belongs to the family Noctuidae.

ORDER : DIPTERA (table 24)

Only the family name Cecidomyiidae could be identified with certainty for the species recorded. This family was only recorded on the three plots of Section 3 B.

ORDER : COLEOPTERA (fig. 39, table 24)

Only the family name Tenebrionidae was identified for this order. These insects occurred on all the plots investigated, but by far the most specimens were found in plot A.

ORDER : HYMENOPTERA (fig. 40, table 24)

From the family Trichogrammatidae, which are so common on the citrus trees above soil, only one specimen of the genus Trichogramma was found in the soil of plot A. No species name could be applied.

From the family Formicidae, however, ants from the species Pheidole megacephala (Fabr.) were extracted. They were

TABLE 24 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF 'OTHER ARTHROPODA' (CONTINUED)

APHIDIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|-------|----------------------|----------------|-------|----------------------|--------------|----------|----------------------|------------|-------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 2 | .0006000 | | | | | | | 2 | .0006000 | 118.231 | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | 2 | .0006000 | | | | | | | 2 | .0006000 | 118.231 | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | | | | | | | | | | | | | | |

COCCIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|-------|----------------------|----------------|----------|----------------------|--------------|-------|----------------------|------------|----------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | 1 | .0000150 | | | | 1 | .0000150 | 59.116 | | | | 1 | .0000150 | 59.116 |
| 1111 | 1 | .0000150 | | | | | | | | | | | | |
| 1109 | 4 | .0000500 | | | | | | | | | | 4 | .0000600 | 235.462 |

PHLAEOTHIRIPIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|----------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 3 | .0001200 | | | | 1 | .0004000 | 59.116 | 1 | .0004000 | 59.116 | 1 | .0004000 | 59.116 |
| 117 | 2 | .0008000 | | | | 2 | .0008000 | 118.231 | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | 3 | .0001200 | 1 | .0004000 | 59.116 | 1 | .0004000 | 59.116 | 1 | .0004000 | 59.116 | 1 | .0004000 | 59.116 |
| 1109 | 21 | .0072000 | 5 | .0020000 | 295.578 | | | | 12 | .0036000 | 709.387 | 3 | .0012000 | 177.347 |

NOCTUIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|-------|----------------------|----------------|-------|----------------------|--------------|----------|----------------------|------------|-------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | 19 | .0034200 | | | | | | | 19 | .0034200 | 1123.195 | | | |
| 1111 | 14 | .0025200 | | | | | | | 14 | .0025200 | 827.618 | | | |
| 1109 | | | | | | | | | | | | | | |

DIPTERA

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|-------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|-------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | 1 | .0002500 | | | | | | | 1 | .0002500 | 59.116 | | | |
| 1111 | 5 | .0012500 | | | | 2 | .0005000 | 118.231 | 2 | .0005000 | 118.231 | | | |
| 1109 | 5 | .0012000 | | | | 1 | .0002500 | 59.116 | 4 | .0009500 | 235.462 | | | |

TENEBRIONIDAE

| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
|-----------|-------|----------|-----------|----------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 2 | .0004800 | | | | | | | 2 | .0004800 | 118.231 | | | |
| 117 | 3 | .0005400 | 2 | .0003600 | 118.231 | | | | 1 | .0001800 | 59.116 | | | |
| H 336 | 2 | .0003600 | 1 | .0001800 | 59.116 | | | | 1 | .0001800 | 59.116 | | | |
| 1111 | 1 | .0001800 | | | | | | | | | | 1 | .0001800 | 59.116 |
| 1109 | 31 | .0058200 | 10 | .0019200 | 591.155 | 8 | .0016800 | 472.924 | 2 | .0003600 | 118.231 | 11 | .0021000 | 650.271 |

FAMILY NOCTUIDAE

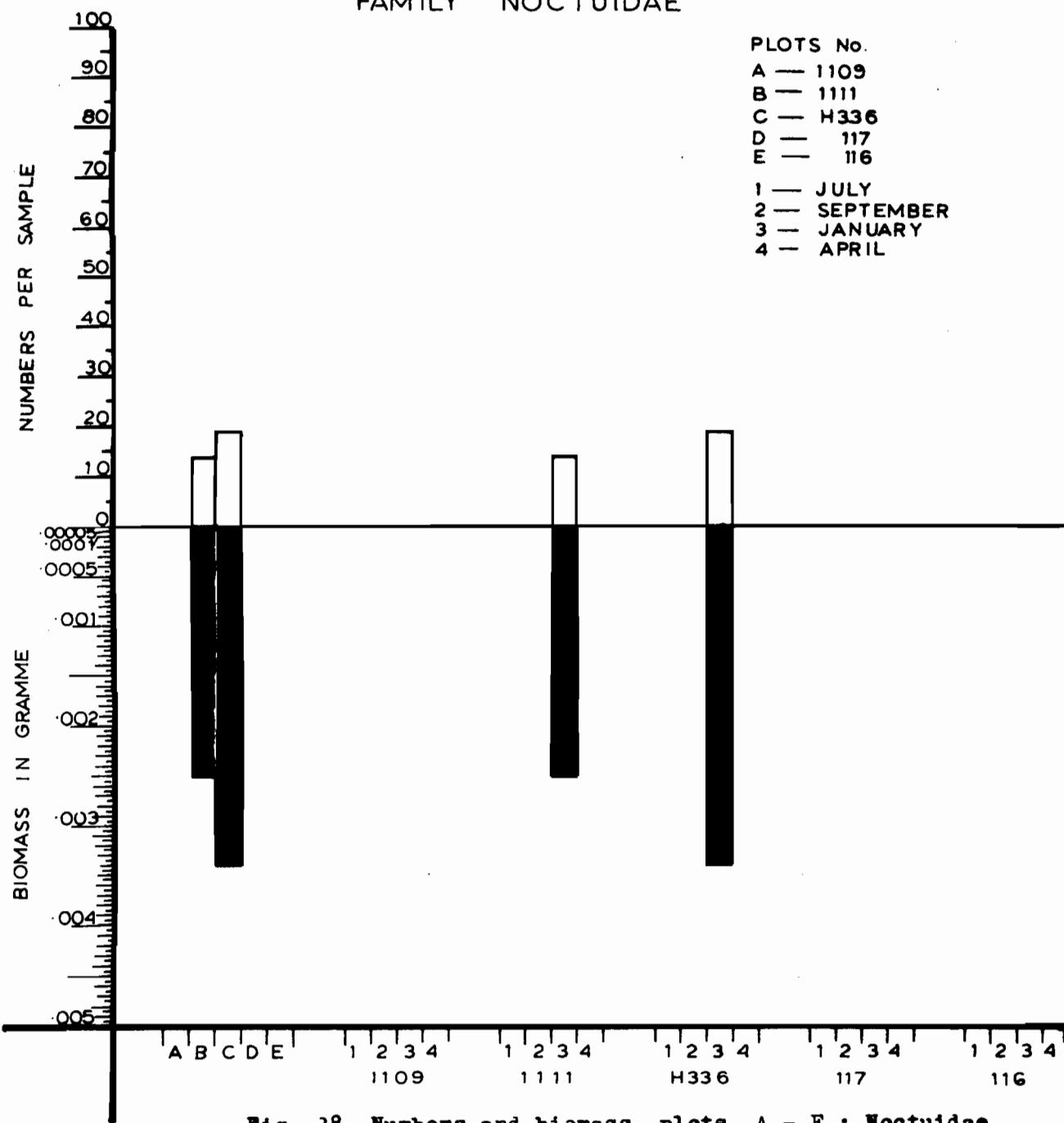


Fig. 38 Numbers and biomass plots A - E : Noctuidae.

FAMILY TENEBRIONIDAE

PLOTS No.

A — 1109

B — 1111

C — H336

D — 117

E — 116

1 — JULY

2 — SEPTEMBER

3 — JANUARY

4 — APRIL

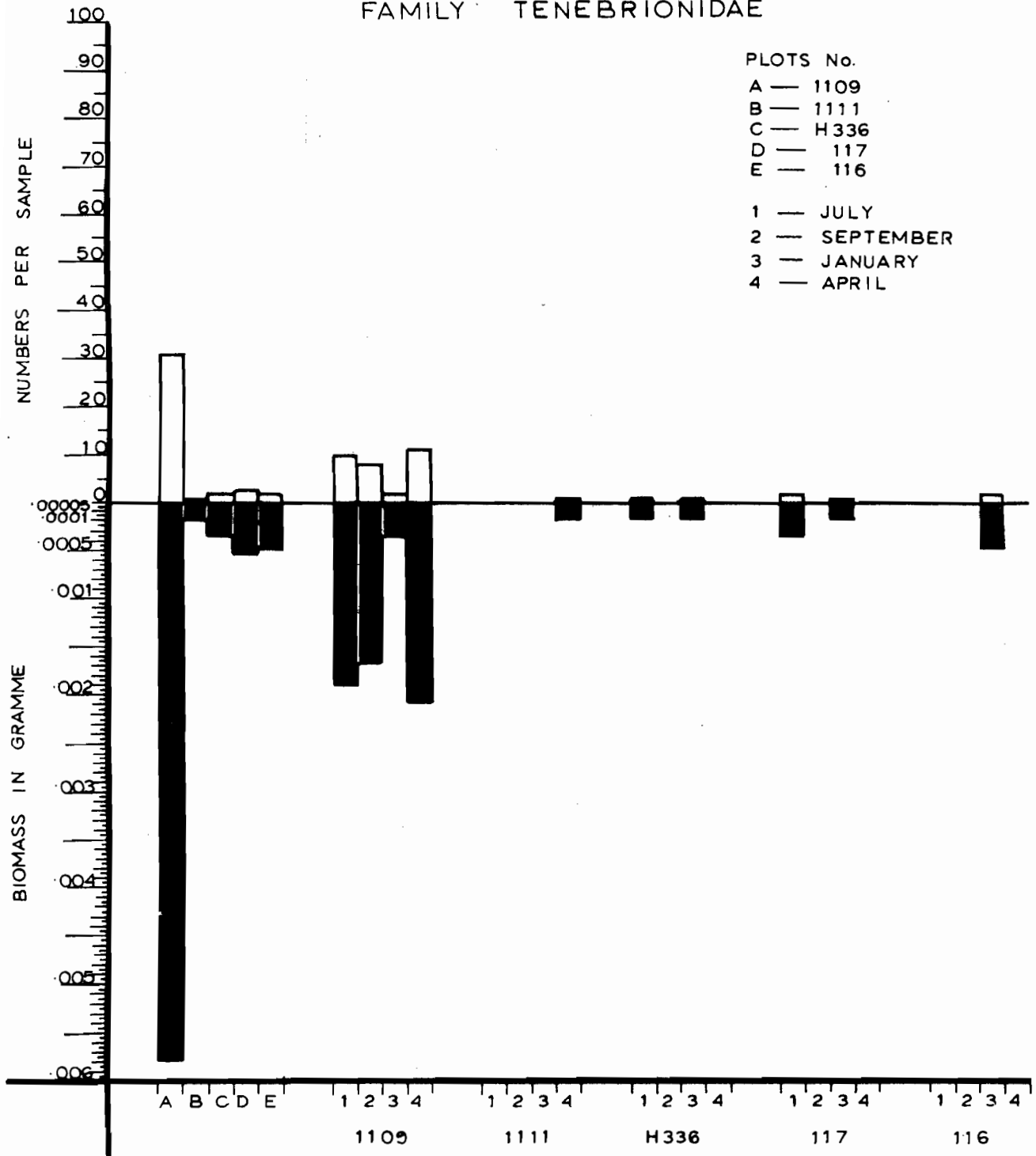


Fig. 39 Numbers and biomass plots A - E : Tenebrionidae.

FAMILY FORMICIDAE

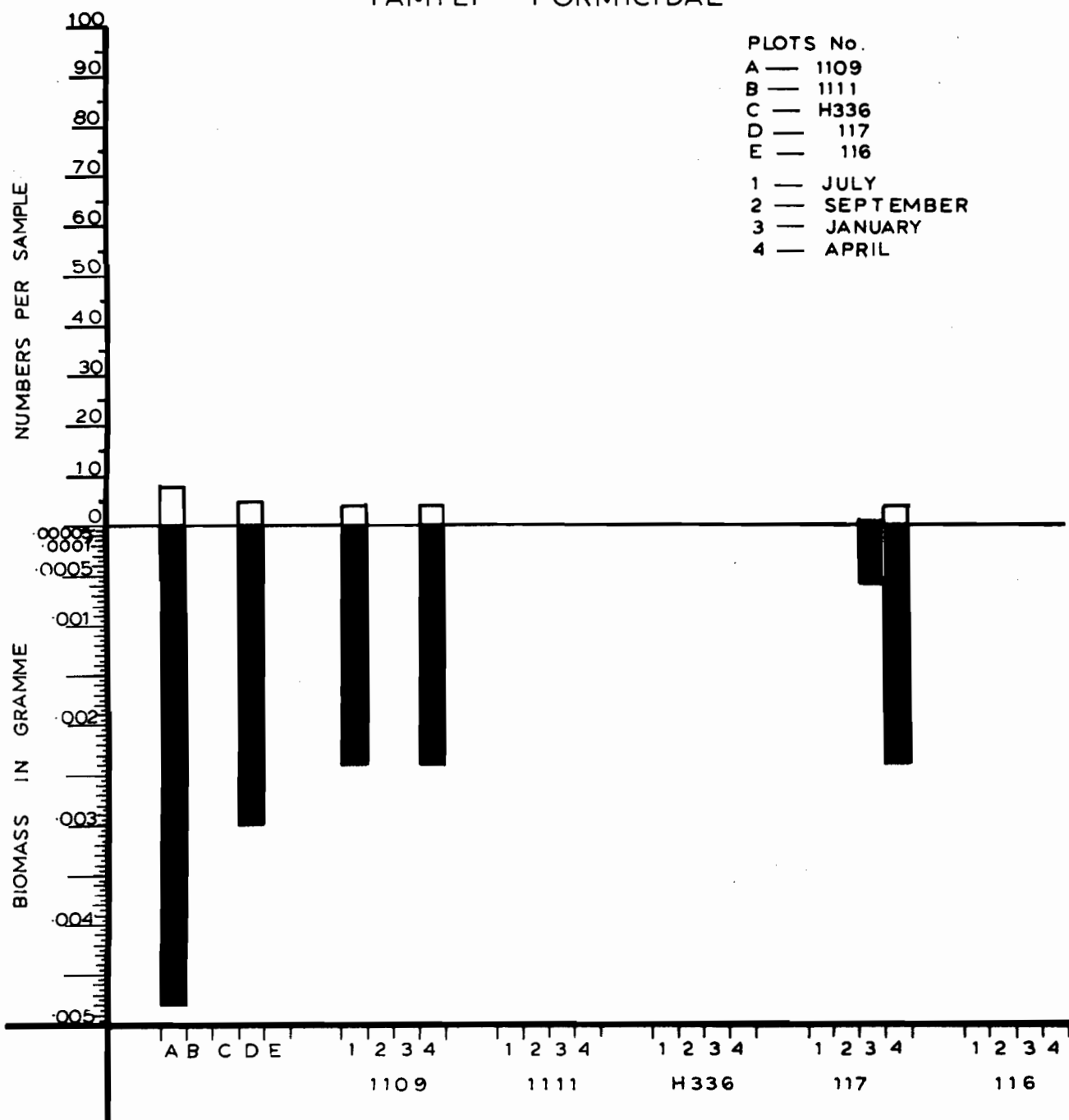


Fig. 40 Numbers and biomass plots A - E : Formicidae.

only found in the control plot and the biological control plot.

CLASS : ARACHNIDA

ORDER : ARANEIDA

Only a few spiders were trapped, and only family names could be given with certainty. The three families registered were: Salticidae, Eresidae and Linyphiidae.

CLASS : DIPLOPODA (fig. 41, table 24)

The diplopods were represented in such large numbers on the control plot, that they attained a dominant biomass position, but only a few specimens were recovered from the citrus plots. The true habitat of the diplopods thus seems to be the natural, undisturbed soil, which was also observed by Dr. P.J. Quin (personal communication), stating that large numbers were ploughed up when the veld was transformed to citrus lands. Only the family name Spirostreptidae was applied.

CLASS : CHILOPODA (table 24)

Only two specimens from the family Geophilidae were recorded at the control plot.

CLASS : PAUROPODA (table 24)

This class was represented by an unknown species of Pauropus. It was found in all five plots and is a common soil inhabitant.

TABLE 24 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF 'OTHER ARTHROPODA' (CONTINUED)

| TRICHOGRAMMATIDAE | | | | | | | | | | | | | | |
|-------------------|-------|----------|-----------|----------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 1 | .0002500 | | | | | | | 1 | .0002500 | 59.116 | | | |
| FORMICIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | 5 | .0030000 | | | | | | | 1 | .0006000 | 59.116 | 4 | .0024000 | 235.462 |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 8 | .0048000 | 4 | .0024000 | 235.462 | | | | | | | 4 | .0024000 | 235.462 |
| ERESIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 2 | .0016000 | | | | | | | | | | 2 | .0016000 | 118.231 |
| SALTICIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 2 | .0016000 | 2 | .0016000 | 118.231 | | | | | | | | | |
| LINYPHIIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 1 | .0008000 | | | | 1 | .0008000 | 59.116 | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | | | | | | | | | | | | | | |
| PAUROPIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 1 | .0000180 | | | | | | | | | | 1 | .0000180 | 59.116 |
| 117 | 1 | .0000180 | 1 | .0000180 | 59.116 | | | | | | | | | |
| H 336 | 1 | .0000180 | | | | 1 | .0000180 | 59.116 | | | | | | |
| 1111 | 1 | .0000180 | | | | 1 | .0000180 | 59.116 | | | | | | |
| 1109 | 2 | .0000360 | | | | | | | | | | 2 | .0000360 | 118.231 |

FAMILY SPIROSTREPTIDAE

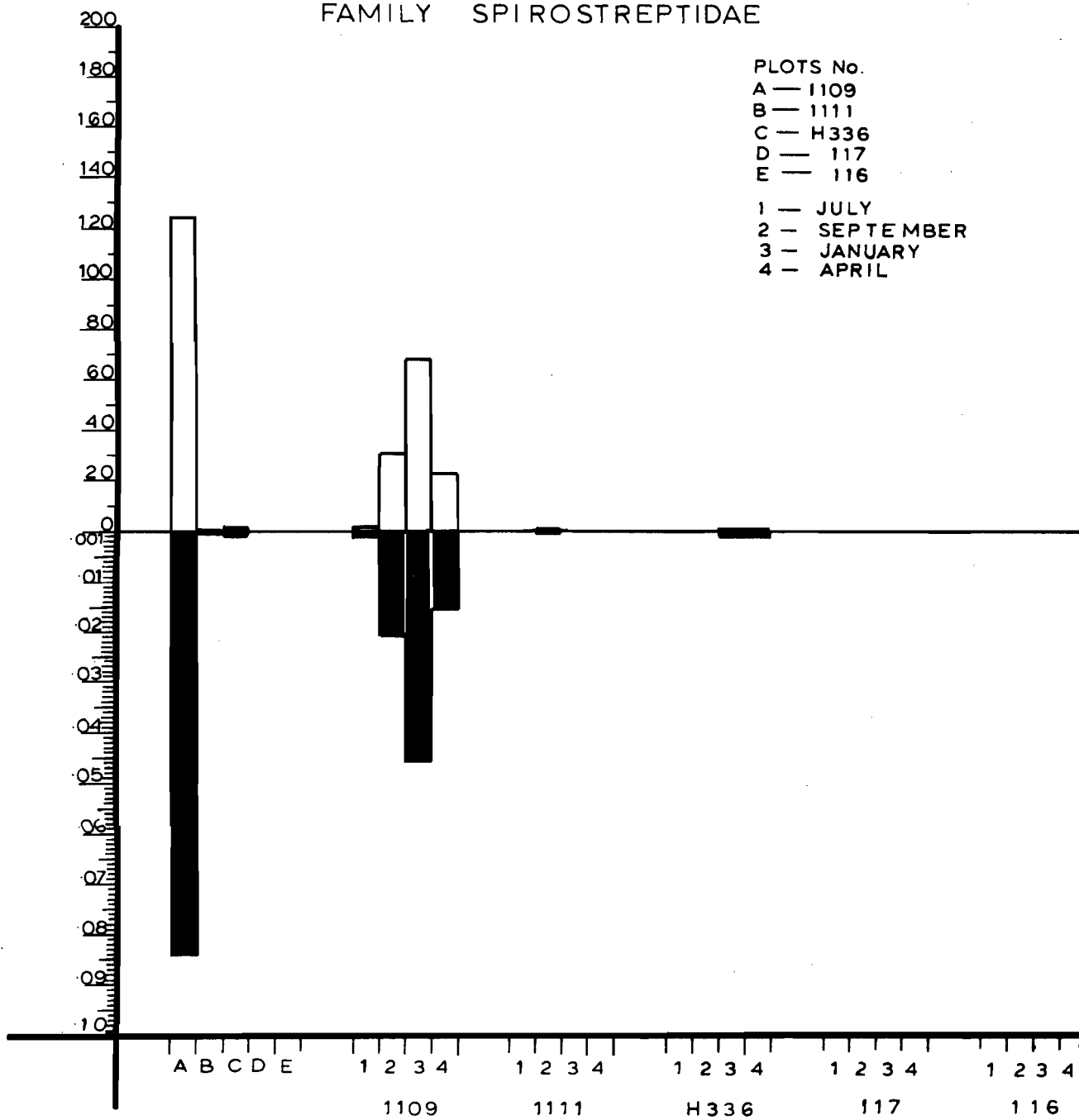


Fig. 41 Numbers and biomass plots A - E : Spirostreptidae.

TABLE 24 NUMBERS AND BIOMASS VALUES, PLOTS A - E : FAMILIES OF 'OTHER ARTHROPODA' (CONTINUED)

| SPIROSTREPTIDAE | | | | | | | | | | | | | | |
|-----------------|-------|----------|-----------|----------|----------------------|----------------|----------|----------------------|--------------|----------|----------------------|------------|----------|----------------------|
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | 2 | .0013600 | | | | 1 | .0006800 | 59.116 | 1 | .0006800 | 59.116 | 1 | .0006800 | 59.116 |
| 1111 | 1 | .0006800 | | | | | | | | | | | | |
| 1109 | 124 | .0843200 | 2 | .0013600 | 118.231 | 31 | .0210800 | 1932.583 | 68 | .0452400 | 4019.860 | 23 | .0156400 | 1359.658 |
| GEOPHILIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 2 | .0039000 | | | | | | | 2 | .0039000 | 118.231 | | | |
| JAPYGIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | 1 | .0001000 | 59.116 | 7 | .0007000 | 413.809 | 1 | .0001000 | 59.116 |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 13 | .0013000 | | | | | | | 10 | .0010000 | 591.156 | 3 | .0003000 | 177.347 |
| LIPOSCHELLIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 4 | .0000800 | | | | 1 | .0000200 | 59.116 | 2 | .0000400 | 118.231 | 1 | .0000200 | 59.116 |
| 117 | 9 | .0001800 | 4 | .0000800 | 236.452 | | | | 5 | .0001000 | 295.578 | | | |
| H 336 | 3 | .0000600 | | | | 1 | .0000200 | 59.116 | 2 | .0000400 | 118.231 | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 83 | .0016600 | 5 | .0001200 | 354.594 | 4 | .0001300 | 532.040 | 64 | .0012800 | 3783.398 | 4 | .0000800 | 236.462 |
| REDUVIIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | 1 | .0004000 | | | | | | | | | | | | |
| 117 | 1 | .0004000 | 1 | .0004000 | 59.116 | | | | | | | 1 | .0004000 | 59.116 |
| H 336 | 2 | .0008000 | 2 | .0008000 | 118.231 | | | | | | | | | |
| 1111 | 2 | .0008000 | 1 | .0004000 | 59.116 | | | | 1 | .0004000 | 59.116 | | | |
| 1109 | 2 | .0008000 | | | | | | | | | | 2 | .0008000 | 118.231 |
| ISOMETOPIIDAE | | | | | | | | | | | | | | |
| PLOTS No. | TOTAL | | JULY 1965 | | | SEPTEMBER 1965 | | | JANUARY 1966 | | | APRIL 1966 | | |
| | Numb. | Biom. | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² | Numb. | Biom. | Numb./m ² |
| 116 | | | | | | | | | | | | | | |
| 117 | | | | | | | | | | | | | | |
| H 336 | | | | | | | | | | | | | | |
| 1111 | | | | | | | | | | | | | | |
| 1109 | 2 | .0030200 | | | | | | | 2 | .0030200 | 118.231 | | | |

CLASS : TARDIGRADA (table 24)

Just four specimens of this interesting group were found, of which three were from plot A and one from plot C. They were all from the family Macrobiotidae.

CLASS : CRUSTACEA

ORDER : COPEPODA (table 24)

This aquatic form occurred in all four citrus plots, but not in the control plot. As all the citrus plots received irrigation, they assumably came from the irrigation dams. The genus Mesocyclops was identified by Dr. F. Kiefer of The Max-Auerbach Institute, Konstanz, Germany.

