

Table 2-1 body length, body width and body weight of representative Pheretima

| Species | n | Body length (mm) | body width (mm) | Body weight (mg dry wt) | length/width ratio |
|----------------------------|-----|---------------------|--------------------|----------------------------|-----------------------|
| <i>Metaphire schmardae</i> | 89 | 63.2 ± 10.2 | 3.0 ± 0.4 | 473.5 ± 168.7 | 21.1 |
| <i>Amyntas</i> sp. (H-1) | 542 | 93.8 ± 16.8 | 4.9 ± 0.7 | 1922.0 ± 800.3 | 19.1 |
| <i>Amyntas vittatus</i> | 65 | 125.7 ± 22.4 | 7.5 ± 1.0 | 6006.1 ± 2227.9 | 16.8 |
| <i>Amyntas irregularis</i> | 30 | 104.1 ± 20.4 | 5.0 ± 0.7 | 2205.9 ± 1008.3 | 20.8 |
| <i>Metaphire</i> sp. (M-3) | 29 | 109.4 ± 15.4 | 4.0 ± 0.4 | 1433.5 ± 394.3 | 27.4 |
| <i>Amyntas corticus</i> | 755 | 101.9 ± 27.1 | 2.9 ± 0.7 | 799.3 ± 333.9 | 35.1 |
| <i>Amyntas micronarius</i> | 53 | 72.3 ± 14.5 | 3.1 ± 0.5 | 563.8 ± 195.5 | 23.3 |

Table 2-2 Composition of gut content of representative Pheretima

| Species | A | Dates | n | Large humus | | | | Small humus | | | | Amorphous humus | | | | Mineral soil | | | | |
|----------------------------|-------|----------------|-----|-------------|----|----|----|-------------|----|----|----|-----------------|----|----|---|--------------|----|----|----|---|
| | | | | +++ | ++ | + | - | +++ | ++ | + | - | +++ | ++ | + | - | +++ | ++ | + | - | |
| <i>Metaphire schmardae</i> | H | 1968/7/6 | 6 | 0 | 0 | 0 | 6 | 0 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 |
| <i>Amyntas</i> sp. (H-1) | H | 1968/7/6 | 21 | 0 | 4 | 11 | 6 | 19 | 2 | 0 | 0 | 2 | 9 | 9 | 1 | 0 | 1 | 12 | 7 | |
| | D | 1971/7/7 | 29 | 3 | 3 | 15 | 8 | 21 | 5 | 3 | 0 | 4 | 9 | 16 | 0 | 1 | 5 | 20 | 3 | |
| | D | 1972/5/23 | 28 | 0 | 0 | 9 | 19 | 26 | 1 | 1 | 0 | 4 | 10 | 14 | 0 | 0 | 0 | 26 | 2 | |
| | D | 1972/7/15 | 26 | 0 | 1 | 13 | 12 | 16 | 7 | 3 | 0 | 11 | 11 | 4 | 0 | 1 | 0 | 24 | 1 | |
| | Total | | 104 | 3 | 8 | 48 | 45 | 82 | 15 | 7 | 0 | 21 | 39 | 43 | 1 | 2 | 6 | 82 | 13 | |
| <i>Amyntas vittatus</i> | H | 1968/7/6 | 10 | 5 | 1 | 3 | 1 | 2 | 5 | 3 | 0 | 3 | 2 | 4 | 1 | 0 | 0 | 7 | 3 | |
| | H | 1971/6 -1971/7 | 9 | 2 | 5 | 1 | 1 | 7 | 2 | 0 | 0 | 0 | 5 | 4 | 0 | 0 | 0 | 8 | 1 | |
| | Total | | 19 | 7 | 6 | 4 | 2 | 9 | 7 | 3 | 0 | 3 | 7 | 8 | 1 | 0 | 0 | 15 | 4 | |
| <i>Amyntas irregularis</i> | K | 1968/7/16 | 25 | 0 | 1 | 6 | 18 | 9 | 13 | 13 | 0 | 16 | 9 | 0 | 0 | 0 | 0 | 0 | 25 | |
| | K | 1969/7/18 | 10 | 0 | 0 | 1 | 9 | 1 | 2 | 7 | 0 | 9 | 1 | 0 | 0 | 0 | 1 | 7 | 2 | |
| | Total | | 35 | 0 | 1 | 7 | 27 | 10 | 15 | 20 | 0 | 25 | 0 | 0 | 0 | 0 | 1 | 7 | 27 | |
| <i>Metaphire</i> sp. (M-3) | I | 1971/6 -1971/7 | 20 | 0 | 0 | 0 | 20 | 1 | 0 | 5 | 14 | 19 | 1 | 0 | 0 | 0 | 1 | 0 | 19 | |
| <i>Amyntas corticus</i> | D | 1971/7/3 | 25 | 1 | 2 | 0 | 22 | 2 | 5 | 16 | 2 | 3 | 2 | 19 | 1 | 20 | 2 | 3 | 0 | |
| | D | 1972/7/15 | 20 | 0 | 0 | 1 | 19 | 4 | 0 | 14 | 2 | 6 | 10 | 4 | 0 | 10 | 4 | 6 | 0 | |
| | D | 1972/7/19 | 21 | 0 | 0 | 1 | 20 | 0 | 3 | 15 | 3 | 4 | 2 | 14 | 1 | 17 | 3 | 1 | 0 | |
| | Total | | 66 | 1 | 2 | 2 | 61 | 6 | 8 | 45 | 7 | 13 | 14 | 37 | 2 | 47 | 9 | 10 | 0 | |
| <i>Amyntas micronarius</i> | H | 1968/7/6 | 12 | 0 | 0 | 0 | 12 | 0 | 0 | 3 | 9 | 5 | 0 | 7 | 0 | 7 | 4 | 1 | 0 | |

Table 2-3 Eco-morphological feature of representative Pheretima

| Species | <i>Metaphire schmardae</i> | <i>Amyntas</i> sp. (H-1) | <i>Amyntas vittatus</i> | <i>Amyntas irregularis</i> | <i>Metaphire sieboldi</i> | <i>Metaphire</i> sp. (M-3) | <i>Amyntas corticus</i> | <i>Amyntas micronarius</i> |
|--------------------------------|--|--------------------------|---|--|---|-------------------------------|--|----------------------------|
| Life history | Newly born hatch out in spring, mature in summer and disappear till August | | Newly born hatch out in spring, mature in June and some remained till November. | | Newly born hatch out in summer, mature till next summer, and disappear till August. | | Many younger appear in summer, mature till next summer, and some remain till winter. | |
| Life time | 6 months | | 8 months | | 12 months | | over 12 months | |
| age composition | One generation | | | | Two or three generation | | | |
| Main habitat | Compost | Old grass field | Old grass edge of | Edge of forest | Ever green forest in mountain site | | Younger vegetation | Older vegetation |
| Inhabit layer | Litter | | | | Litter - A -Soil | | | |
| Hibernate site | | | | | Dry dingle | Deeper soil layer | | |
| Body pigmentation | yellow green | dark reddish brown | dark brown with yellow band | dark reddish brown | deep black purple | | light grey brown | light purplish brown |
| Number of pair of spermathecae | two | | | | three | two | four | |
| Activity | Active | | | | sluggish | | | |
| Body form | Plumply | | | | slenderly | | | |
| Body size | 474 | 1922 | 6006 | 2206 | 30500 | 1434 | 799 | 564 |
| Intestinal coeca | 5 | 6-7 | 8 | 6 | Most complex | Simple showing a conical form | | |
| Composition of gut content | Organic rich matter | Small raw humus | Large raw humus | Organic rich matter with small raw humus | Litter from tree leaves | Organic rich matter | Organic rich soil and mineral soil | |

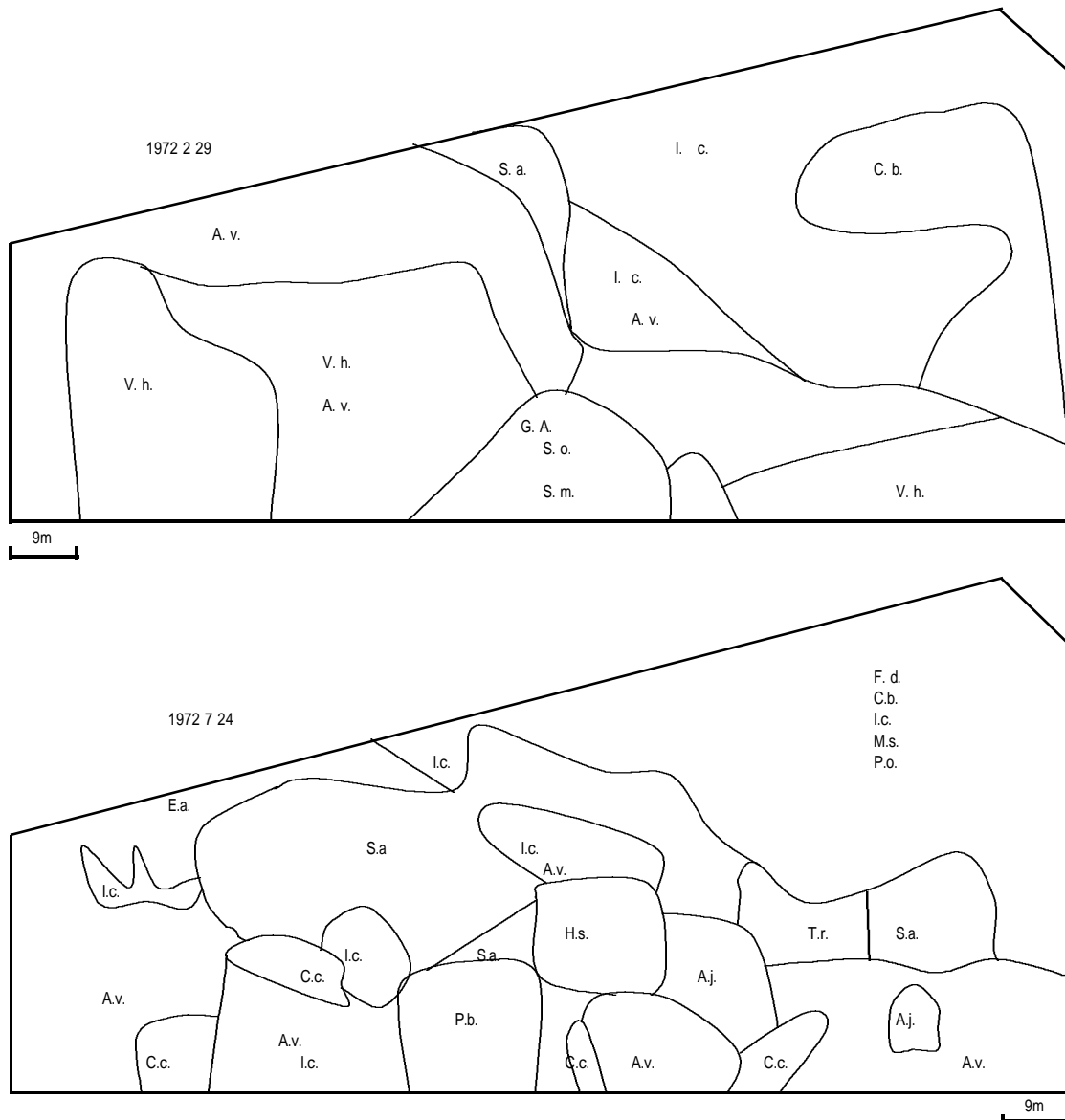


Fig. 2-1. The vegetation maps of the experimental field.

- | | |
|----------------------------------|----------------------------|
| A.j. : Achyranthes japonica | A.v. : Artemisia vulgaris |
| C.b. : Cyperus brevifolius | C.c. : Comelia communis |
| F.d. : Fimbristylis dichotoma | G.A. : Galium Aparine |
| H.s. :Hydrocotyle sibthorpioides | I.c. : Imperata cylindrica |
| M.d : Medicago denticulata | M.s. : Miscanthus sinensis |
| P.B. : Polygonum Blumei | P.o. : Paspalum orbiculare |
| S.a.: Solidago altissima | S.m. : Stellaria media |
| S.o. :Sonchus oleaceus | T.r. : Tradescant reflexa |
| V.h. : Vicia hirsuta | E.a. : Arigeron annuus |

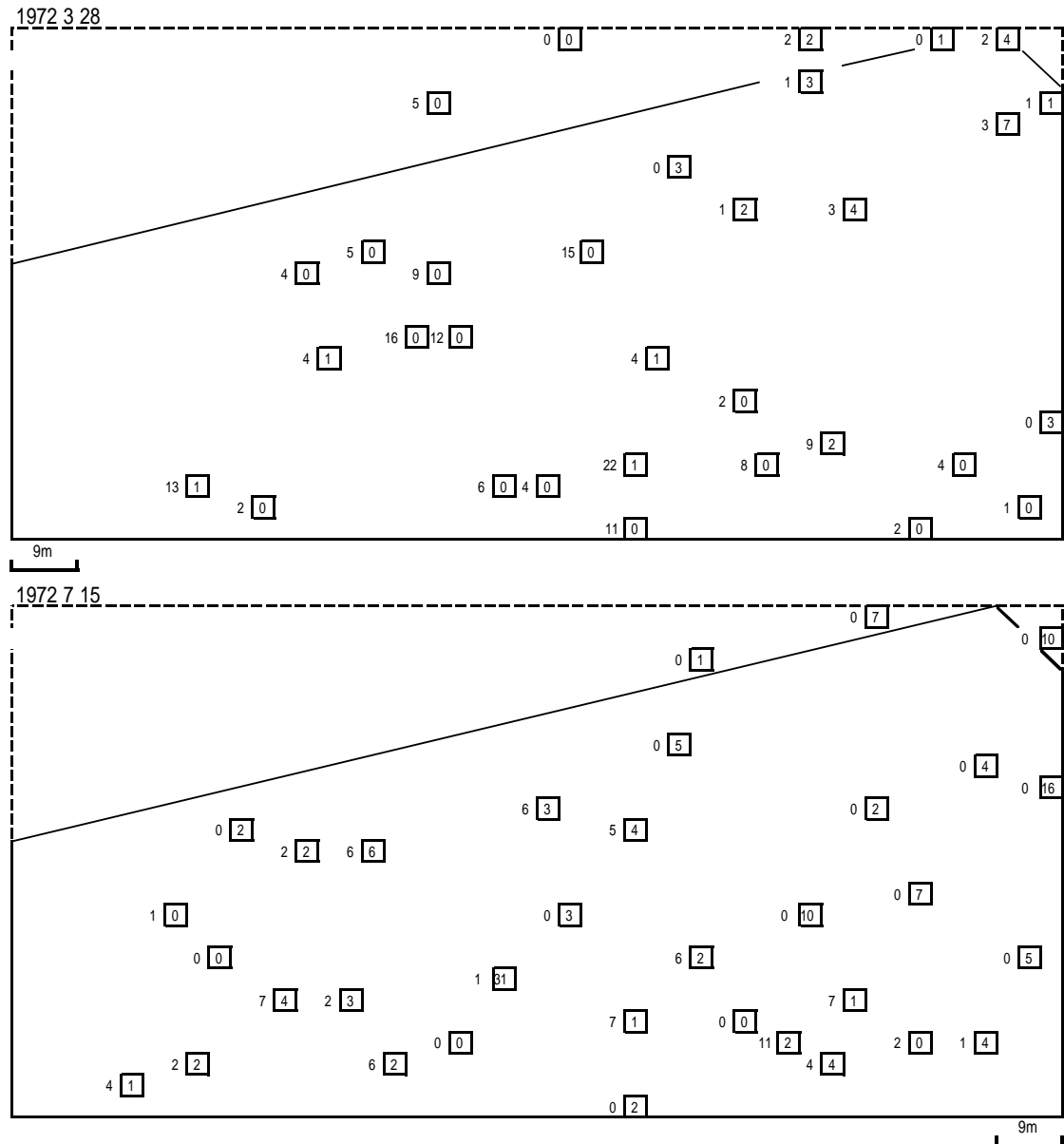


Fig. 2-3a. Distribution maps of earthworm in the experimental field.

Black letter indicate the density of *Amyntas* sp. (H-1) and Black letter in rectangular indicate the density of *Amyntas corticus*. (N × 16 m²)

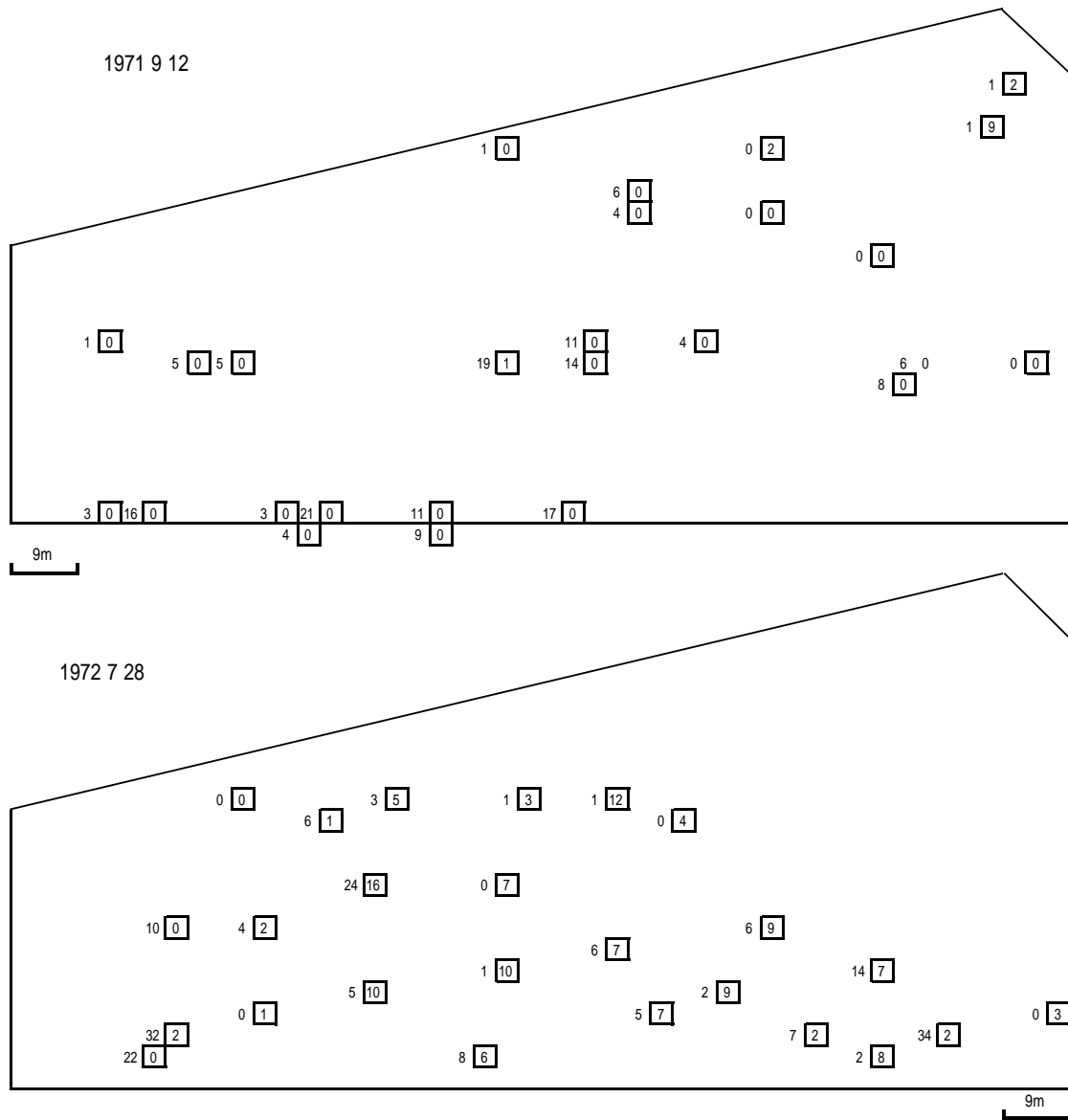


Fig. 2-3b. Distribution maps of earthworm's cocoon in the experimental field.
 Black letter indicate the density of *Amyntas* sp. (H-1) and Black letter in rectangular indicate the density of *Amyntas corticus*.
 (N × 16 m⁻²)