

## WHY NOT STUDY PHASMIDS?

By Phil Bragg

(8 Cornwall Ave, Beeston Rylands, Nottingham. NG9 1NL)

The Amateur Entomologists' Society recently published the results of a survey into interests of young entomologists (Reavey & Simmons 1990). The third most popular group was the Phasmids, with 46% expressing an interest in the order and 21% ranking them first or second in order of interest.

However the survey does not give a true picture of the way the order is regarded by most people. Sadly the order has a poor reputation amongst entomologists, most are familiar with **Carausius morosus (Sinety)** the "indian" or "laboratory" stick insect, and wrongly assume the whole order is as plain. This is not the case.

The Order Phasmida, the stick and leaf insects, is one of the smallest orders of insects, containing about 2500 species. It is ironical that such a small order contains the biggest insects, **Pharnacia serratipes (Gray)** is the world's longest insect and **Heteropteryx dilata (Parkinson)** is a contender for the title of heaviest insect (Wood 1976). Many have very bright colours or spectacular wings or impressive large spines or unusual behavior.

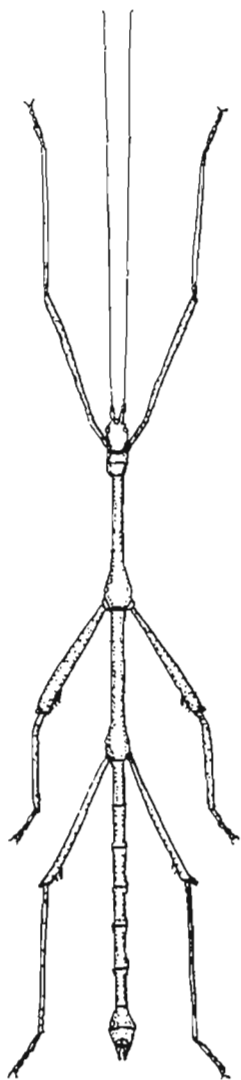
There are various reasons why little notice is taken of the order. Only one species is regarded as harmful, **Anisomorpha buprestoides (Stoll)** from the U.S.A., it sprays a fluid which is irritating and can cause temporary blindness if it gets into the eye. Only a small proportion are pests of crops and outbreaks of pest proportions are generally quite rare. The majority of Phasmids inhabit tropical areas, particularly rain forests, there are only three British species, so the British entomologist rarely encounters them. In addition to all these problems, the order is largely nocturnal and relies on near perfect mimicry as its main form of defence.

However there are equally good reasons why more study of the order should be encouraged. They are generally large (the smallest is 1.5cm) and therefore they are very suitable for anyone interested in looking at the structure of insects. Most are harmless, none bite, and only a few are equipped with spines which are large enough to be damaging. Quite a few species are easy to breed in captivity, there are currently about 100 species being reared, this is 4% of the described species!

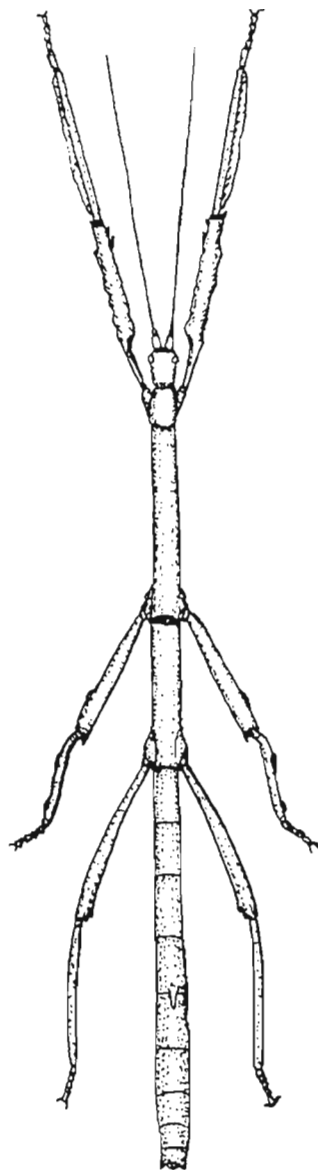
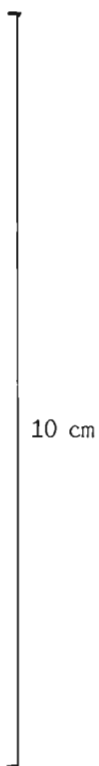
Very little is known about the majority of the order, for many species there are no records other than the original specimen. The eggs, food-plants and behaviour are totally unknown for almost all species. The order is sexually dimorphic, ie. the males and females often look totally different, for many



*Dares nolimetangere* (de Haan) male  
from Borneo



male



female

*Lonchodes amaurops* (Westwood)  
from Borneo

species only one sex is known, or in some cases the male has been described with one name and the female with another. There are many undescribed species yet to be found, in 1989 I found a new species in a National Park! Some species can be used as a source of food (Bragg, in press) and the spiny back legs of *Eurycantha latro* Redtenbacher have been used as fish-hooks (Balfour 1915).

The Phasmid Study Group, as its name suggests is devoted to the study of this impressive order. The group has members all over the world, although the majority are in Britain, produces a quarterly newsletter and has a system for the distribution of members' surplus livestock. If you'd like any further details please contact me at the above address.

## REARING PHASMIDS

### HOUSING

The height of the cage must be at least twice the length of the insect, to allow it to shed its skin; it is advisable to try to have the height at least three times the length of the adult insect. Cages can be made from almost anything. Fish Tanks stood on end with cloth or netting covering the front, are quite good. Tall sweet jars with small holes in the top are very good for young insects or a few adults. Even cardboard boxes with air holes and plastic or netting tops can be used although they are far from ideal. As with any animal, a purpose built cage is best, the most suitable are based on a wooden frame covered in fine netting, with glass or perspex front. It is necessary to put plastic sheeting outside the netting to maintain humidity for some species.

### HEATING

Stick insects are almost all tropical and should be kept indoors at room temperature or slightly above (15-25°C). The cage can be heated with a light bulb if required. Beware of keeping them on window sills where the cage may overheat on sunny days.

### FOOD

Almost all species kept in the U.K. eat bramble leaves, many also eat Rose, Raspberry, Oak, Hawthorn, Eucalyptus and some eat Rhododendron, Ivy and Privet. The food plant should be kept with the bottom ends in a jar bottle full of water. The short (15cm) style of milk bottle are useful for this. Make sure there are no leaves in the water as they will quickly rot and start to smell. The top of the bottle should be plugged with tissue or newspaper to prevent drowning. Kept like this the food can last two weeks but remember that they cannot eat dead leaves.

Finding food in winter can sometimes be a problem as a very hard frost can kill the bramble leaves. However it is possible to find a suitable bramble in sheltered places such as in woods, thick hedgerows, overgrown gardens etc. Stick insects are edge feeders, that is they nibble the edges of the leaves not the surface. If the leaves are frost damaged around the edges you should trim off the dry pieces with a pair of scissors. Beware of feeding very new leaves in spring, they seem to be poisonous as many species refuse to eat them, try to offer a choice until you are sure the new leaves are being eaten.

## **WATER**

Stick insects do not need a constant supply of drinking water but many species need humid conditions to do well and should be lightly sprayed with water each evening. They will often drink the drops of water on the plants.

## **CAGE MATES**

Stick insects should not be kept with other insects as they may be mistaken for twigs and eaten. Different species can be kept together but beware of keeping bulky species with fragile species.

## **BEHAVIOUR**

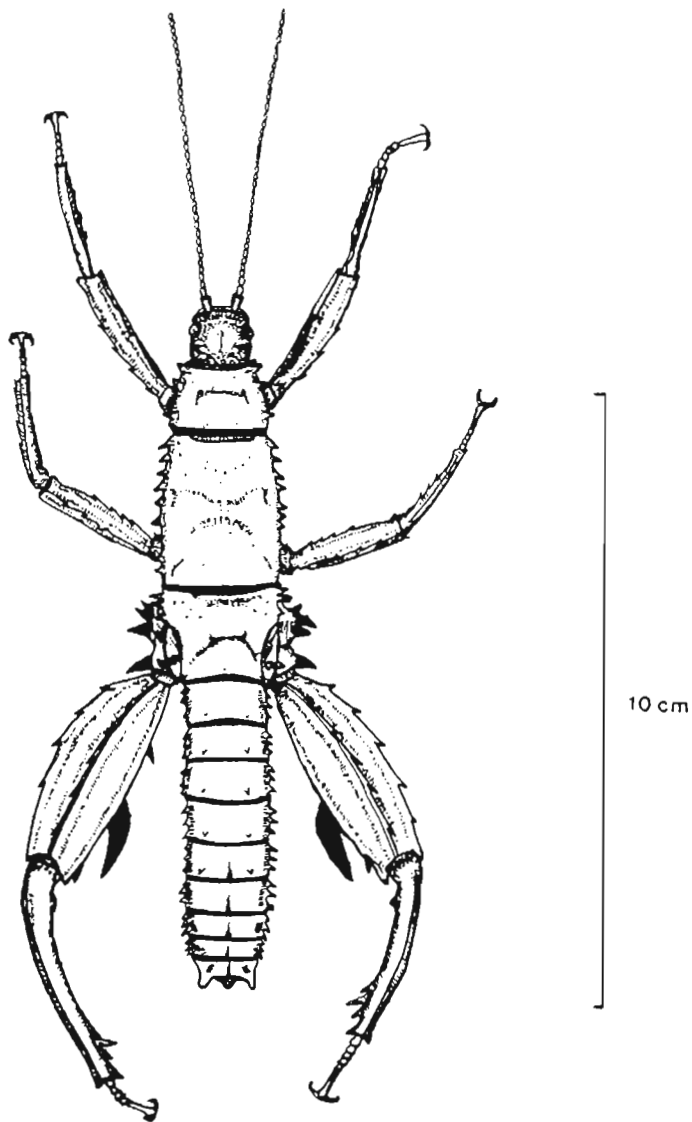
Most stick insects are nocturnal, feeding and moving around in the evening and at night. The warmer they are, the more active they will be; but this means they will eat more, grow faster and die faster. As a general rule the flying species will only fly when the weather is warm. If stick insects are overcrowded or under fed they may bite each other, causing loss of limbs. Limb loss can also occur if the insect is disturbed while shedding its skin. The limbs will regrow if they are lost when young but adults and large nymphs cannot regrow lost limbs. Lifespan can be between nine months and five years, it varies with the species and the temperature, most species live about one year. Several species produce a smell as a means of defence, in the case of *Anisomospha buprestiodes* this is painful if it gets into cuts and dangerous if it gets into the eyes.

## **HANDLING**

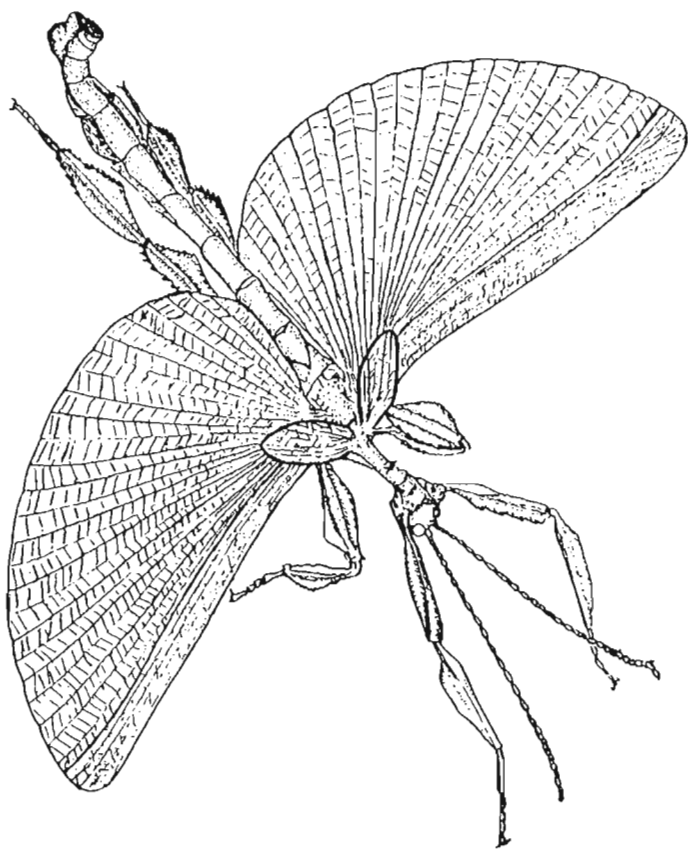
If disturbed during the day many species will play dead to begin with, in the hope that you will go away! However they usually give up quite soon and can be quite active. Care is needed or the insect may shed legs, avoid gripping the legs or pulling them off their perches. Care is also needed with the large spiny species which can inflict a nasty cut, however they usually tame easily and are no problem once they have been picked up.

## **BREEDING**

Some species are parthenogenetic, males do not occur; the female



male  
*Eurycantha calcarata* (Lucas)  
from Indonesia & New Guinea



male

*Extatosoma tiaratum* (Macleay)

from Australia

10 cm

produces fertile eggs without being mated. Most species do have both sexes although often the female is capable of breeding on her own. Eggs which are produced without mating can only develop into females. Very rarely what appears to be a male is produced from a parthenogenetic egg; these "males" cannot breed. The males of most stick insects are much thinner than the females.

The females start to lay eggs soon after becoming adult. They lay between 2 per week and 15 per night, depending on the species. Most drop the eggs on the cage floor. Some bury their eggs in damp sand or peat and a few hide them in cracks or glue them to the food plant and side of the cage. If you don't get any eggs, you're doing something wrong. Most eggs are easily recognised but some look similar to the droppings. Eggs take from 2 to 15 months to hatch, 2 to 6 months for most species. The best method of hatching the eggs is to separate them from the droppings and keep them moist, either on damp tissue or damp sand. Most species will hatch at room temperatures but the process can be speeded up by keeping them in a warm place such as an airing cupboard but be careful not to get them above 30°C. The eggs of the European and northern U.S.A. species may need a cool period to induce hatching, a few weeks in the fridge will help.

## BOOKS

The following is a list of the few books specifically on Phasmids; there are sections on stick insects in a few general pet books, but these tend to give less information than I have given above.

The Phasmid Rearer's Handbook, by Paul Brock. 41 pages, 26 figs. It gives advice on 45 different species, breeding, rearing, housing etc. It is without doubt the best available and an excellent buy at £2.85 (inc. post & packing). Available only from: A.E.S. Publications, "The Hawthorns" Frating Road, Great Bromley, Colchester, Essex. CO7 7JN.

Keeping Stick Insects, by Dorothy Floyd. It contains some nice photographs but only deals with 7 species. £4.95.

How to Keep Stick Insects, by Michael Byron. 20 Pages, 19 figs. Only 4 pages on keeping stick insects, the rest is highly detailed descriptions of 8 species which are of little use. £3.50.

Stick and Leaf Insects, by J. Clark. Out of print but available from some public libraries (e.g. Nottingham Central Library).

The Phasmid Study Group Newsletters. Published four times per year, these contain many useful ideas and information. They are issued free to members (see page 21).

## **THE PHASMID STUDY GROUP**

This is an international group of people who are interested in keeping stick insects. Membership is open to anyone (£3.50 per year) and there is free exchange of member's surplus insects. Details from either myself (address on page 13) or: Membership secretary, Paul Brock, "Papillon", 40 Thorndyke Road, Slough, Berkshire. SL2 1SR.

## **REFERENCES**

- Balfour. H. (1915) Note on a new kind of fish-hook from Goodenough Island, d'Entrecasteaux group, New Guinea. *Man*, 15: pl. B.
- Bragg. P. E. (in press) Phasmida and Coleoptera as food. *The Bulletin of the Amateur Entomologists' Society*.
- Reavey. D. & Simmons. M. (1990) Entomology and young people. *The Bulletin of the Amateur Entomologists' Society*, 49: 66-75.
- Wood. G. L. (1976) *The Guinness book of animal facts & feats* (2nd edition). Guinness London.