

## Fine Structure of the Chelicera in the Spider *Nephila clavata*

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The fine structural characteristics of the biting apparatus in the orb-web spider *Nephila clavata* are studied using scanning electron microscope. The venom of spider is produced by one pair of venom gland in the cephalothorax, and is injected to prey via the cheliceral fang. The chelicera is that of a jack-knife type which composed of two segments. This spider has a pair of labidognathous form that moves by right angles to the body axis. Each chelicera bears a hinged fang that fold into a cheliceral groove. The tips of the fangs are quite sharp, and is well adapted to driving the fangs to catch the prey. Just below the fang, each side of cheliceral groove is covered with a total of 7 cuticular teeth. It is composed of 4 promarginal teeth and 3 retromarginal teeth. The fang has a single pore which appeared only on the tip of posterior surface, and the lower margin of the fang which meets with promarginal teeth is modified as a saw-like groove. It has revealed that each fang has a single venom pore, and each cuticular depressive area has two different types of pits on the surface of the cheliceral groove. Moreover, the cheliceral groove has approximately 40-50 spiky protrusions to hold the prey more tightly.

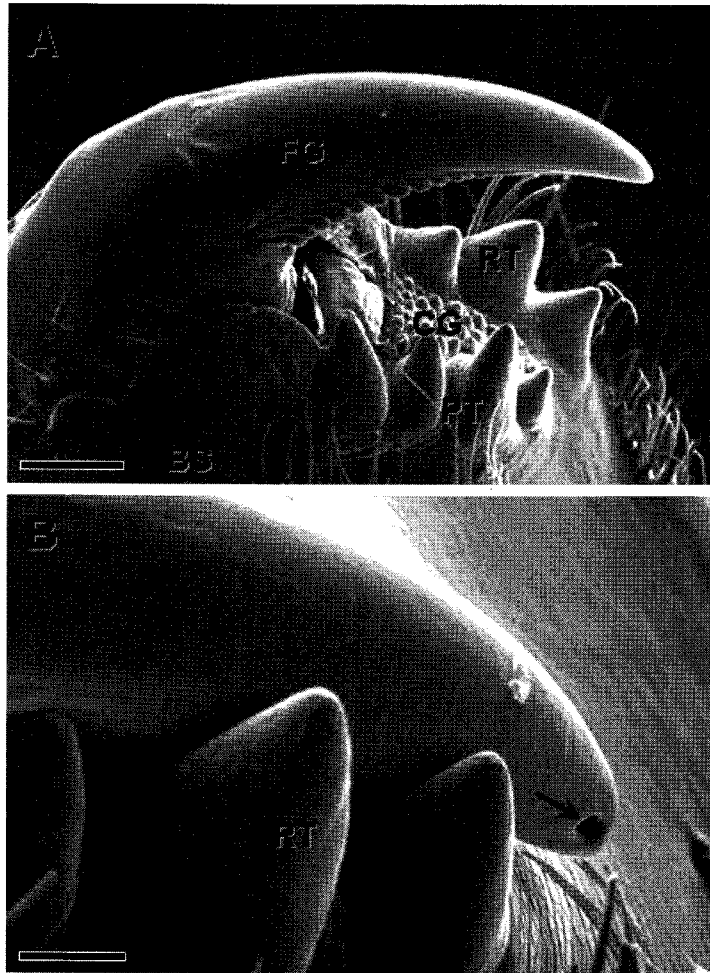


Fig. 1. A: The chelicera in *Nephila clavata* is located at the cephalothorax, and is basically composed of a basal segment (BS) and a movable cheliceral fang (FG). Each fang is articulated with a basal segment and sit in a cheliceral groove (CG). B: The fang has a single aperture (arrow) near the tip. PT: promarginal teeth, RT: retromarginal teeth. Scale bars indicate 200  $\mu\text{m}$  (A) and 30  $\mu\text{m}$  (B), respectively.