may be transferred to a fresh bottle. Usually only a few seeds are contaminated in any bottle but these must be removed or transferred when contaminants appear.

Germination time varies with species, Sarracenias and some Droseras appearing within four to six weeks of sowing. Drosera rotundifolia seeds will not germinate unless seeds are refrigerated in the flasks for several weeks. Byblis gigantea seeds may require a year before germination begins. Some tuberous Australian Droseras germinate quickly and grow prodigiously in bottles, especially D. auriculata and D. peltata. They will flower in flask if not removed in time. Drosera pygmaea and Pinguicula lusitanica also flower in flask. Other Drosera species either germinate irregularly or not at all, such as D. gigantea, D. macrophylla and D. stenopetala. It would be very informative to relate seed germination behaviour to ecology in some of these species of specialized habitats.

Seeds which have grown well in flask are ultimately transferred to the greenhouse and grown to maturity. We find these procedures useful, the seedlings requiring much less attention than their pot-grown equivalents in the greenhouse. The initial trouble of media preparation and planting is offset by the months of freedom from greenhouse work which follow. I would be interested in hearing the experiences of others in using specialized approaches to seed germination of these or other insectivores.

GROWING ALDROVANDA VESICULOSA
by Tsunewo Saito

Aldrovanda vesiculosa loves acid (pH around 6) and fresh water, the same as other aquatic carnivorous plants such as Utricularia. The shape of the shoot apex of this species may tell you whether or not it is in healthy condition. Thus, if the shoot apex is rounded and onion bulb-shaped, it is in quite good condition in the right pH and environment. This species loves sunshine or high light intensity. Since you may be cultivating this species in small containers, water movement wouldn't be expected and you must watch the temperature in the container under sunlight. They do not like temperatures up to 32° C. (90° F.). The container must be earthenware instead of glass or metal. The best water temperature for Aldrovanda vesiculosa may be 25 to 30° C. where most flowering occurs. Acidity is very important for the cultivation of this species. You may put dead stems or leaves of grasses or sedges (especially rice grasses) in the water used for cultivation of Aldrovanda vesiculosa to promote acidity. Whenever the water color changes to yellow, it is a sign that the water is acid. If you have a pond with aquatic plants, like Japanese Iris, rushes, sagittaria, etc., and keep the water acid and abundant with organic compounds, it might be great to use it for Aldrovanda cultivation. If you use distilled water for Aldrovanda cultivation, you would have to add the following chemicals

as a medium:

$(NH_4)_2SO_4$	24 mg/l
K_2SO_4	64
$MgSO_4$	44
KNO_3	55
K_2HPO_4	25
$Ca(NO_3)_2$	29
Citric acid	3

Algal growth may inhibit Aldrovanda growth in which case add desiccated alum and change the water frequently.

NEPENTHES AND I - MT. KINABALU (BORNEO, MALAYSIA) TRIP

by Yoshiwo Toyoda

Mt. Kinabalu, located in Saba State, North Borneo, Malaysia, is the highest mountain in southeastern Asia, 4101 m. alt. (13,455 ft.). Since this area is called Mt. Kinabalu National Park (433 km^2 wide), the Malaysian government supports this park and protects its wildlife, animals and plants. This mountain is very famous as a Nepenthes source, especially four endemic species.

A chance to go there came to me in 1971: the governmental office of the park was looking for a person who could make a field trip for Nepenthes collecting with some workers there. I applied and they were very cooperative with me. I joined their field trip from April to May, 1971. According to previous literature, most of the Nepenthes in Mt. Kinabalu grow in the zone between open mixed forests (alt. 900-1800 m.) and moss forests (alt. 1800-3150 m.), called the Nepenthes zone. We planned a visit to this zone first and then to Marei-Parei where the king of Nepenthes, N. rajah grows.

First of all, we reached the headquarters of Mt. Kinabalu National Park (alt. 1615 m.). Around this foggy area, we found Nepenthes tentaculata, the first species of the trip. Next day, we left the 9100 base camp for further searching. Nepenthes stenophylla was found in a grassy area along the trail by the electric power station, alt. 2145 m. Soon after that, hundreds of beautiful Nepenthes tentaculata were seen along the trail. Then we entered into the moss forest with thousands of mosses, orchids, and many other tropical plants and N. tentaculata in wonderful natural gardens. If you could see it, you would never forget it. According to our observations, the humidity was 50% and the temperature was 23.5° C.

After that, in the next zone, we found Nepenthes lowii which was climbing up trees. Pitchers of this species were very peculiarly shaped. In this area the humidity was 40%, temperature 25° C. Soon after we saw the building of the radio station (Radio Sabah, alt. 2590 m.) and found another species, Nepenthes villosa. Then at 3:00 p.m. we reached our first camp (alt. 2654 m.). The next day, at altitude around 3047 m., there was the biggest population of Nepenthes villosa we have ever seen.