

## HEALTH/SCIENCE

## Life begins anew in May's rice paddy

By KEVIN SHORT

Ever wonder why some Japanese urban workers seem even more tired after the Golden Week vacation than before.

It's really no wonder at all. Many new urbanites are originally from farming households, and have spent the early May vacation helping their aging parents get the family rice paddies planted.

Transplanting season was always one of the busiest times in the Japanese agricultural calendar. Paddies had to be plowed, leveled and filled with water. Irrigation channels and the aze, narrow dikes that separate the paddies, were always in need of repair. Bundles of rice seedlings were laboriously planted by hand.

Today, the entire job is mechanized. Specialized tractor attachments, amazingly clever devices, neatly plant the seedlings at predetermined intervals. Larger canals are maintained with power shovels, and in many cases the original hand-dug ditches have been replaced with concrete channels.

Still, transplanting is a lot of hard work. Water pumps must be activated, and heavy machinery moved in and out of soft paddies. For this reason, many elderly farmers do their transplanting during Golden Week, when the "young folk" are on hand to help out.

The transplanting, called *taue*, is an event of great importance, in both the spiritual calendar of the farmers and the seasonal cycle of the countryside ecosystem. Their first great task accomplished, farmers give thanks and offer prayers for a successful harvest. While in the paddies, the intentional flooding has created overnight a rich marshland habitat.

To fill the paddies, small

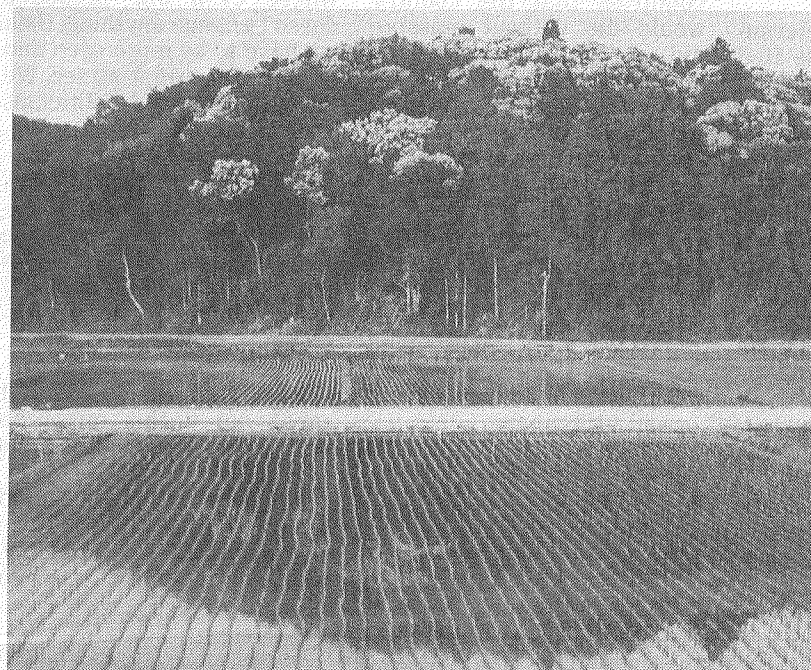
water well into summer, plenty of time for their eggs to hatch into tadpoles, and the tadpoles to develop into miniature frogs.

Crayfish have spent the winter hibernating deep in the paddy mud. The inflow of new water is a signal for them to emerge and begin feeding on unwary fish, as well as on the tender young buds of water plants (including, unfortunately, the rice seedlings). The crayfish you see in rice fields and irrigation ditches are American crayfish, brought to Japan in 1930 as feed for the bullfrog aquaculture programs. Now these aggressive invaders have spread throughout the lowland rice districts. The habitat of the native Japanese crayfish is restricted to mountain streams in the northern part of the country.

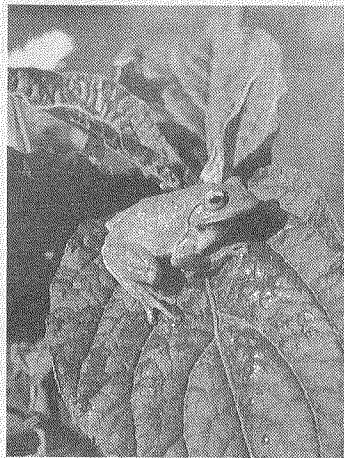
Dragonfly eggs, laid down in the fall, hatch out into swimming nymphs, called naiads or *yago*. These voracious hunters have specialized jaws which can be snapped out at lightning speed. They ambush other insects, and even small fish, and must grow and molt several times before crawling out and metamorphosing into masters of the air.

A bucket of water scooped from a rice paddy is swarming with aquatic insects: water scorpions, toe-biters, diving beetles, whirlgigs, boatmen and backswimmers. Blood-sucking leech lurk among the seedlings, and the surface of the paddy is alive with water striders (sometimes called "Jesus-bugs" for their ability to walk on water). Water striders slide effortlessly over the surface film, feeding on mosquitoes and other tiny flying insects that fall into the paddy.

Barn Swallow and house martin, back home from southern wintering grounds,



**JAPANESE CHINKAPIN TREES** bloom alongside a newly planted rice field. For two millennia, the paddies' wildlife have adapted their biological rhythms to the farmers' harvest calendar. PHOTOS BY KEVIN SHORT



**SCHELGEL'S GREEN TREE FROG** (*Rhacophorus schelegelii*) kills time in a rice field. On the right, the annual rice planting isn't quite the backbreaker it once was thanks to specialized tractor attachments.



chicks, spend entire days flying back and forth from nest to paddy. Starling, crow and turtle dove forage in the shallow areas around the edge of the paddy. A convenient overhang may contain a common kingfisher, waiting patiently for a chance to plummet down onto a loach or bitterling.

The Dusky Thrush, winter visitors from Siberia, are reluctant to return home until they have had a shot at foraging in the newly flooded paddies. Golden Plover arrive from their southern wintering grounds, spend a few weeks feeding intensively and storing up fat reserves, then leave

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