WITCHES BROOM ON PIGEON PEA INDUCED BY MEALY BUG INFESTATIONS.

In January, 1961, 35 out of 56 pigeon pea plants (*Cajanus cajan* Millsp.) in a small plot being grown in the experimental food crop garden at the Lowlands Agricultural Experiment Station, Keravat, New Britain, showed marked witches broom symptoms (Plate II) of the lateral shoots. Each shoot was heavily infested with mealy bugs [*Planococcus citri* (Risso)]† in all stages of development. The plants were thoroughly sprayed with malathion plus wetting agents which eliminated the mealy bugs. Six weeks after spraying, all the plants appeared quite healthy. Buds from abnormal shoots were grafted onto healthy pigeon pea seedlings and of the thirty plants grafted, none developed witches broom shoots.

Plate II.—Witches Brooming of lateral shoots on *Cajanus cajan*.
(Induced by infestations of mealy bugs.)

In the glass house, 20 pigeon pea seedlings were raised. Mealy bugs were collected from stock colonies in the glass house and released onto the seedlings when 10 weeks old. The terminal shoots were removed to induce the development of laterals. After 12 weeks, the lateral shoots had developed the typical witches broom symptoms as observed in the field. Spraying was carried out as in the field trial and all the test plants recovered.

Thus it has been concluded that the witches brooming on *Cajanus cajan* observed at Keravat is induced by heavy infestations of mealy bug [*Planococcus citri* (Risso)].

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(Manuscript received 5th September, 1961.)

† The insect identification was made by the Commonwealth Institute of Entomology.

TWO ANIMAL PARASITES PREVIOUSLY UNRECORDED IN NEW GUINEA.

TWO animal parasites, previously unrecorded in New Guinea were recently identified at Lae. They are *Gongylonema ingluvicola* and *Notoedres cati.*

Gongylonema ingluvicola.

A few specimens of this nematode were found in a mature fowl during a routine post-mortem examination.

G. ingluvicola is found in small burrows in the mucous membrane of the crop of fowls, turkeys and quail. The worm is characterized by a zone of shieldlike markings on the anterior end of the body. Mature male worms measure 1.7-2.0 cm long and mature females 3.2-5.5 cm long.

The life cycle is uncertain but it is thought to involve cockroaches and possibly some species of beetles as intermediate hosts.

The only damage these worms cause are local lesions in the form of burrows in the mucosa of the crop.

It is unlikely that infestation with *G. ingluvicola* alone would cause any ill effects in fowls. Their presence, however, indicates that flock hygiene is faulty and that heavy infestations with other parasites likely. The fowl in which this parasite was identified at Lae was also infected with *Amaebotaenia sphenoides* (a tapeworm), *Capillaria* sp. and *Oxyspirura mansoni* (eye worm), despite treatment of the flock with piperazine.

Notoedres cati.

This parasite was responsible for a severe case of mange in a European owned cat.

N. cati is a small mite which closely resembles *Sarcoptes scabei* except for the dorsal position of the anus.

The mite causes a disease known as Notoedric mange, usually seen in cats, but occasionally in pups. In Notoedric mange, thick crusts are seen on the edges of the ears, between the eyes, on the head, neck, paws and tail. There is little irritation, but the animal is very depressed and may even die.

The mites are usually plentiful and easily found when scrapings from affected areas are examined microscopically.

Weekly washing with Tetmosal (Tetra-ethyl-thurium monosuphide) 5 per cent. in soap or application of Gammexane (1 per cent.) in liquid paraffin every four days generally cures the condition.

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(Manuscript received 10th May, 1961.)

PEROSIS IN DUCKLINGS.

PEROSIS or slipped tendon is a condition in poultry due to a deficiency of manganese. This element is thought to be required in greater quantities when there is a high calcium and phosphorus intake. A deficiency of choline can also predispose to perosis.

It has been recorded previously in Papua in turkeys but does not appear to be common. There is usually an adequate amount of manganese present in the soil so that if birds are allowed free range they should not suffer from any manganese deficiency.

The outbreak under consideration occurred in a backyard flock of 30 ducklings at Boroko, Port Moresby. The birds were between six and eight weeks old and were locally bred. They were housed in a run with adequate shade and suitable watering facilities. Sawdust, changed once a fortnight, was used on the ground. Free range was not permitted. Diet consisted of green leaf scraps from one of the local freezing companies and imported poultry mash. Six birds had died over a period of four to five days when one was brought in for examination. Its gait showed the typical "spraddle legs" seen in perosis of the tibio-tarsal joint. The affected joint was enlarged and flattened and post-mortem examination revealed that the Achilles tendon had slipped from its groove behind the hock and taken up a position on the medial aspect of the joint, thus completely crippling the leg. The six deaths were probably due to inability to forage. The owner was, therefore, advised to add manganese sulphate to the ration. This, however, proved unobtainable locally so coconut meal, which is rich in manganese, was substituted at the rate of 1 lb. per 3.6 lb of ration.

As expected the affected birds showed an improvement and although further losses occurred in the following week resulting in a total mortality of nearly 50 per cent., no fresh cases developed.

This outbreak was thought to be worth recording because perosis is apparently not common in ducks. This is probably due to the fact that it is usual for ducks to have free range with access to soil.

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