Suspected poisoning of domestic dogs by *Macropleiota molybdites*

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*Macropleiota molybdites* poisoning is suspected as the cause of an intoxication in four German Shepherd dogs. There was very strong circumstantial evidence that the dogs had eaten this fungus and the symptoms encountered were similar to those described for human poisoning with this species. To our knowledge this is the first report of poisoning by *Macropleiota molybdites* in dogs.

**Keywords**: Poison, dogs, *Macropleiota*, Argentina.

Few reports of poisoning of dogs by fungi are known. Yam, Helfer and Watling (1994) reported the poisoning of a domestic dog by *Inocybe phaeocoma* (Pers.) Kuyper in the United Kingdom. In South Africa *Amanita pantherina* (DC. ex Fr.) Secr. was suspected as the cause of a severe, transient neurological disorder in German Shepherd puppies (Naude & Berry, 1997). In this report *Macropleiota molybdites* (Meyer: Fr.) G. Moreno, Buzares & Heykoop is suspected as the cause of an intoxication in four German Shepherd dogs in Argentina.

Human poisoning by *Macropleiota molybdites* is well known (Groves, 1979; Young, 1989; Natarajan & Kaviyarasan, 1991; Piquerias Carrasco, 1996; Watling, 1997). It is considered to be a gastrointestinal irritant (Piquerias Carrasco, 1996; US FDA web site, 1989), and is generally not fatal. The toxin chemistry responsible for this type of poisoning is almost unknown; however, some studies suggest that it has a quaternary ammonium fraction and presents cholinergic type effects (Torrelio & Izquierdo, 1970). Lehmann & Khazan (1992) reviewed the literature and discussed the chemistry of this toxin and the associated symptoms.

Martinez (1948) described this species for the first time in Argentina as *Lepiota morgani* Peck. In his report toxic characteristics of this fungus were only mentioned.

**Case history**
A seven-year old, female German Shepherd was presented at the veterinary hospital “Del Oeste”, showing severe depression, salivation, agitation, weak heartbeat, fixed pupils and incomplete paralysis (muscular weakness).
The treatment consisted of atropine sulphate, dexametason and a hepatic protector with vitamin B complex. The dog died due to cardiac and respiratory arrest two hours after the symptoms had been manifested.

Three two-year old dogs of the same breed showed similar symptoms; one of them presented vomits. Atropine sulphate, 5% dextrose and hepatic protector with vitamin B complex were administered. Twenty-four hours later these animals recovered.

The veterinarian observed and collected basidiomes from the place in the garden where the dogs had been feeding and, having discarded other causes of intoxication, contacted the mycologist at the School of Science of the Universidad de Buenos Aires.

**Mycological identification**
Basidiomes collected were identified as belonging to *Macrolepiota molybdites*.


Pileus 6-14 cm in diameter, globose to broadly convex (in fresh material), planate when mature. Epicutis brown, broken into scales from the margin to the middle of the pileus, exposing its whitish subcutis. Stipe 5-14 x 7-13 cm, cylindrical, wide, slightly curved or straight, bulbous and whitish, with a whitish annulus located at the middle of the stipe. Gills free, well separated from the stipe, wide, colour changing according to the stage of development, at first cream or whitish but then acquiring a typical greemish shade and showing grey – olivaceous colours in exsiccata. Epicutis a trichoderm consisting of cylindrical hyphae, compressed and sometimes branched. Spores 7-16 x 6-9 μm, amyloid, broadly ellipsoid, with thick yellowish – hyaline walls, apex truncate and often showing an apical and central germ spore. Basidium tetrasporic, 9-10 x 30-35 μm. Chelioecystidia 9-15 x 35-45 μm. Taste bitter, smell reminiscent of flour.

**Discussion and conclusion**
So far the results are not definitive about the effects of the substance responsible for the toxicity of *M. molybdites*. However, cholinergic properties of some materials in this fungus have been suggested. The symptoms here described are similar to those which would be expected for a toxin with these properties (Goodman Gilman, Goodman & Gilman, 1981) and are similar to those described for human poisoning with this species. Although vomiting and diarrhoea are described for this type of poisoning, this can not be demonstrated because of the extensive area occupied by the animals, but there was very strong circumstantial evidence that the dogs had eaten *Macrolepiota molybdites* and that was the cause of intoxication.

To our knowledge this is the first report of poisoning by *Macrolepiota molybdites* in dogs.

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**References**