

Scientific Note
Verification Study on Sugarcane Soft Scale Insects, *Pulvinaria elongata* Newstead and *Pulvinaria tenuivalvata* (Newstead) in Egypt (Hemiptera: Coccoidea: Coccidae)

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In 1992, several samples of a long, crimson coloured soft scale insect were collected from sugarcane leaves cultivated in a greenhouse used for breeding the varieties of sugarcane at The Plant Protection Research Station, Sabaheia, Alexandria, Egypt. They were slide mounted and kindly identified by Dr. D. Miller at the Systematic Entomology Laboratory, Agriculture Research Service, USDA, Beltsville, Maryland as *Pulvinaria elongata* Newstead. Hence, it was published as a new record in Egypt by Karam and Abu-ElKhair (1992) with description and figure after Hamon and Williams (1984).

Several years later, severe damage to sugarcane crop, in Upper Egypt was caused by a soft scale insect heavily infesting leaves. Ministry of Agriculture established a great project to control this pest. Naturally, the first step was to identify it. It was identified in 1996, in The Natural History Museum, Paris, France (I. Foldi) as *Saccharolecanium crugeri* (Zehntner). Subsequently, Ali *et al.* (1997) published a paper of it as the first record in Egypt; provided with coloured photographs under the name *S. crugeri*. While reading that paper and checking the photos, I had a doubt that it might be the previously recorded *P. elongata* that had found in Alexandria.

In 2000, I visited The Plant Protection Research Institute, Dokki, Giza and eventually examined slide-mounted specimens from Upper Egypt, prepared by a research student who was preparing a thesis on this pest considering it as *S. crugeri* based on Ali *et al.* (1997) reference. It was clearly obvious to me that it could never be *Saccharolecanium crugeri* but *Pulvinaria* sp. and asked the late Dr. Samir El-Serwy, at the same Institute, to resend more samples to coccids experts to confirm my identification. He sent them to The Natural History Museum, London, UK.

By reexamining the specimens collected by El-Serwy, in 1996 and 2000, from Upper Egypt governorates only, as well as the type material from Uganda; Watson and Foldi (2001-2002) corrected the name of the soft scale on sugarcane in Egypt as *Pulvinaria tenuivalvata* (Newstead). They mentioned in their introduction that "some Egyptian entomologists refer to this species as *Pulvinaria elongata*" and stated that it is neither *S. crugeri* nor *P. elongata*. They did not take into consideration the Alexandria species since there are no samples sent to them.

Recently, I had the opportunity to get some samples from Assuit (Upper Egypt) and mounted them on slides. When I read the recent paper of the re-description of *P. tenuivalvata* by Abdel-Razak *et al.* (2017) I found the authors still dealing with *P. elongata* as a misidentification of *P. tenuivalvata*. Therefore, I decided to clarify this continuous confusion of the identification status of *P. elongata* from Alexandria and *P. tenuivalvata* which was recorded only in Upper Egypt.

By scrutinizing examination of my old mounted specimens from Alexandria and the recent ones from Assuit (Upper Egypt) based on the diagnostic characters given by Watson and Foldi (2001-2002). I found them identical in many characters but differ in three specific diagnostic characters. These characters are the dorsal setae shape, claw denticle, and width of claw digitules. A comparison of these characters in the descriptions of Watson and Foldi (2001-2002), Abdel-Razak *et al.* (2017) and the specimens from Alexandria and those which I have got recently from Assuit (Upper Egypt) is summarized in Table (1). These characters of Alexandria specimens are completely differ from those of Upper Egypt specimens; whether those identified by Watson and Foldi or my own recently mounted ones from Assuit.

It is concluded that the soft scale insects on sugarcane leaves in Egypt are two species, *P. elongata* (Alexandria) and *P. tenuivalvata* (Upper Egypt).

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