

**THE GIANT RESIN BEE, *MEGACHILE SCULPTURALIS* SMITH, AND OTHER
NEWLY INTRODUCED AND NEWLY RECORDED NATIVE MEGACHILIDAE AND
ANDRENIDAE (APOIDEA) FROM ONTARIO.**

S.M. PAIERO and M. BUCK

Department of Environmental Biology, University of Guelph,
Guelph, ON, N1G 2W1

E-mail: spaiero@uoguelph.ca

Recent collecting in restricted tallgrass and oak savannah habitats in Ontario has shown the bee fauna of these sites to be highly speciose. While several surveys have previously documented the Apoidea from a few southern Ontario sites (MacKay and Knerer 1979; Sugar et al. 1998), and have revealed several unrecorded and rare species in Ontario, many Carolinian sites remain to be sampled, and potentially contain additional rare or previously unrecorded species. Current survey work by personnel associated with the University of Guelph Insect Collection in several grassland sites in southern Ontario has led to the discovery of several species new to Canada and Ontario.

As in many other groups of insects the Ontario bee fauna is undergoing changes because of the arrival of foreign species accidentally introduced to North America. One of these new arrivals is *Anthidium manicatum* (L.), which was recently recorded for the first time from Ontario (Smith 1991). This species is now well established in southern Ontario and locally common.

This paper adds one more invasive species of Megachilidae to Ontario and reports new Canadian and Ontario records for three species of Megachilidae and Andrenidae.

New Apoidea Records

All specimens were identified using Mitchell (1960, 1962) unless otherwise stated. Depository is the University of Guelph Insect Collection.

Megachilidae

***Megachile (Callomegachile) sculpturalis* Smith, 1853**

Essex County: 2♂♂, Ojibway Prairie Provincial Nature Reserve, 42°15'N 83°4'W, 30 July 2002, visiting flowers of *Veronicastrum virginicum* (Linnaeus), M. Buck; Point Pelee National Park, West Beach, 1♀ visiting flowers of *Melilotus alba* Medikus (no pollen present in scopa), 29 July 2003, 1♂, 13 August 2003, D. Cheung; **Halton Region,** 1♀, Nassagaweya Township, Twinbrooks Tract, 20 July 2002, W.J. Crins.

Megachile sculpturalis is an eastern Palaearctic and Oriental species that has been introduced to the eastern Nearctic region. This large bee, commonly referred to as the giant resin bee, is easily distinguished from native megachilids by its relatively large size (~17-23 mm) and its infuscated wings. Michener (2000) gives additional characters to separate other Nearctic megachilids from *M. sculpturalis* (the only Nearctic species in the subgenus *Callomegachile*). The specimens from Ojibway Prairie are the first ones collected from Canada. However, shortly before this paper went to print, Mangum and Sumner (2003) published the first observation of this species from Ontario. Their sighting of a single female (apparently no voucher was collected) dates about one week later (8 August 2002), from an unspecified locality in "southern Ontario" (l.c., p. 659). The first Nearctic records of *M. sculpturalis* were from North Carolina in 1994 (Mangum and Brooks 1997). Since then, the species has been recorded from 14 additional states in the eastern U.S.: Alabama, Connecticut, Delaware, District of Columbia, Georgia, Maryland, New Jersey, New York, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia (Batra 1998; Kondo et al. 2000;

Ascher 2001; Mangum and Sumner 2003). Females of the subgenus *Callomegachile* line their nests with mud, or more commonly tree resin (Batra 1998), unlike the native leaf-cutting *Megachile*, which line their cells with pieces of vegetation that have been clipped by the female. *Megachile sculpturalis* uses previously existing cavities to nest in, and commonly occupies abandoned *Xylocopa* nests (Mangum and Brooks 1997; Ascher 2001). Mangum and Brooks (1997) recorded *M. sculpturalis* from June to August. The species is polylectic (Mangum and Brooks 1997; Ascher 2001) and visits mainly flowers of introduced species in North America (Mangum and Sumner 2003). The above record from *Veronicastrum virginicum* (L.) represents a new flower record for the species.

Stelis costalis Cresson, 1872

Essex County: Point Pelee National Park, 1♂, 18 July 1978, D.H. Pengelly; 1♀, 20 July 1978, L. Templin; 3♂♂, Point Pelee National Park, *Opuntia* field, 0.75 km N of Visitor Centre, 24 July 2003, S.M. Paiero; 2♂♂, Point Pelee National Park, Old Maintenance Yard, 41°56'54"N 82°31'14"W, 29 July 2003, M. Buck; 1♂ 1♀, Point Pelee National Park, West Beach, 41°59'0"N 82°27'30"W, 13 August 2003, M. Buck; 1♂ 1♂, Point Pelee National Park, The Tip parking lot, 41°55'3"N 82°30'37"W, 13 August 2003, M. Buck; 1♀, Windsor, Ojibway Prairie Provincial Nature Reserve, 42°15'N 83°4'W, 12 September 2002, M. Buck.

This is the seventh species of *Stelis* known from Ontario. It has previously been recorded from Virginia west to Kentucky and south into Florida and Texas (Hurd 1979). Members of this genus are cleptoparasitic on bees of the tribe Megachilini (Hurd 1979). This species is polylectic and the flight period is from March to September (Mitchell 1962).

Andrenidae

Perdita (Cockerellia) bequaerti bequaerti Viereck, 1917

Essex County: 2♀♀, Windsor, Springarden Rd. Area of Natural and Scientific Interest, 42°15'N 83°4'W, 27 August 2002, S.M. Paiero.

The genus *Perdita* is one of the most speciose genera of bees in North America, containing well over 250 species (Hurd 1979). The centre of its diversity is the southern Nearctic, with only three species previously recorded from Ontario. *Perdita bequaerti bequaerti* is the only representative of the subgenus *Cockerellia* in Ontario. It has been previously recorded from New Jersey west to Minnesota and south to Florida and Mississippi (Hurd 1979). The species is distinguished from other Ontario species in possessing broad transverse ivory bands on the abdominal tergites. This species is polylectic and the flight period is from June to September (Mitchell 1960).

Perdita (Perdita) maculigera maculipennis Graenicher, 1910

Brant County: Brantford Railway Prairie, 43°10'N 80°19'W, 1♂, 6 June 2002, white pans, M. Buck; 3♀♀, 24 July 2002, M. Buck & S.M. Paiero. **Bruce County:** Inverhuron Provincial Park, front dunes, 44°17'33"N 81°35'28", 2♀♀, white pans, 1♂, yellow pans, 2 July 2003, M. Buck. **Kent County:** Rondeau Provincial Park, South Point Trail East, 42°15'35"N 81°50'53"W, savanna, 16-17 June 2003, 8♂♂ 12♀♀, white pans, 3♂♂ 25♀♀, yellow pans, M. Buck and H. Carscadden; 1♀, Rondeau Provincial Park, South Point Trail, east parking lot, 42°15'42"N 81°50'49"W, dunes, 16-17 June 2003, yellow pans, S.M. Paiero; **Manitoulin District:** 15♀♀, Manitoulin Island, Providence Bay, 45°39'41"N 82°15'40"W, dunes, 18 July 2003, M. Buck.

This is the fifth species of *Perdita* to be recorded from Ontario. It has been previously recorded from Minnesota, Wisconsin, Michigan, Illinois, Iowa, Kansas and Texas (Hurd 1979). Its natural history was well documented by Michener and Ordway (1963), who indicate that this species

prefers sandy banks. Mitchell (1960) records the adult flight period from June to July. The species is obviously univoltine in the province. Females are polylectic (Michener and Ordway 1963).

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