(44) **Formica subpolita** var. **camponoticeps** Wheeler:—Okanagan Falls, April 24th, 1919; Chilcotin, April 23rd, 1920; Kamloops, April 15th, 1925; Osoyoos, April 23rd, 1925; Lillooet, May 27th, 1925; Vaseaux Lake, March 17th, 1926.

(45) **Formica neogagates** Emery:—Fairview, May 21st, 1919; Chilcotin, April 20th, 1920; Osoyoos, April 23rd, 1925.

(46) **Formica neogagates** subsp. **lasiodes** var. **vetula** Wheeler:—Chilcotin, April 20th, 1920.

(47) **Formica cinerea** Mayr. var.:—Nicola, April 17th, 1925.

Genus POLYERGUS Latreille

(48) **Polyergus rufescens** subsp. **breviceps** Emery:—Chilcotin, April 20th, 1920.

Genus CAMPONOTUS Mayr

(49) **Camponotus levigatus** F. Smith:—Cranbrook, August 20th, 1925.

(50) **Camponotus maculatus** subsp. **vicinus** Mayr:—Osoyoos, April 23rd, 1919; Rockcreek, April 22nd, 1919; Lillooet, May 27th, 1925.

(51) **Camponotus maculatus** subsp. **vicinus** var. **nitidiventris** Emery:—Vernon, April 3rd, 1919; Chilcotin, April 25th, 1920; Kamloops, April 15th, 1925.

(52) **Camponotus maculatus** subsp. **vicinus** var. **luteangulus:**—Nicola, April 22nd, 1924.

(53) **Camponotus herculeanus** var. **whymperi** Forel:—Chilcotin, April 25th, 1920; Barkerville, August 2nd, 1925; Douglas Lake, June 1st, 1925; Revelstoke, July 2nd, 1925; Invermere, August 29th, 1925.

(54) **Camponotus herculeanus** var. **modoc** Wheeler:—Summerland, April 20th, 1919; Chilcotin, April 20th, 1920.

(55) **Camponotus herculeanus** subsp. **ligniperdus** var. **noveboracensis** Fitch:—Keremeos, May 11th, 1919; Fairview, May 3rd, 1919; Chilcotin, April 20th, 1920.

FURTHER NOTES ON RHYNCOCEPHALUS SACKENI, WILL. (Diptera, Nemestrinidae)

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Last spring 1931, I presented before this Society certain records made in summer 1930, of flies laying eggs in telephone poles which were strung along the floor of a long shallow valley in the Chilcotin district of B.C. A closely related fly is reported in literature as parasitizing larvae of wood-boring beetles; I could not at the time reconstruct the life history of the flies I found. However, this past summer 1931, I had an opportunity of again inspecting these same telephone poles and present herewith the following further records which will partly clear up the problem of the habits of these rare flies.

The first visit was on June 3rd and I found three flies ovipositing on a pole, and just above ground level, a specimen of the Cerambycid beetle **Asemum atrum** Esch. alongside a new emergence hole in the wood. Last year I reported the poles as having no emergence holes of any insects in them; this season I noted my mistake, since the three

poles in question had many emergence holes of Cerambycid beetles from ground level to not more than 4 inches up, mostly concealed by straggling blades of grass around the bases of the poles.

The next visit was on June 9th when 18 ovipositing flies were collected and, alongside two new emergence holes, two specimens of the Cerambycid **Xylotrechus obliteratus** Lec. Moreover, two empty puparia, presumably of these flies, were partly protruding from a large crack in the wood. The puparia have been preserved but until I get definite confirmation, I cannot describe them as belonging to these flies.

A visit to another station three miles away on June 12th, took me to a lone poplar tree. This poplar was the sole survivor of one clump, of the prevailing clumps scattered all over the ranges, or occurring as fringing belts to the coniferous forests over most of the Chilcotin country. The previous season the tree had been a conspicuous green landmark on the open range; it was now dying and leafless. Buzzing round its 12-foot-high top like a swarm of bees, was a large number of flies. This was the first time I had found any in any place other than on the telephone poles; most were flying round the top of the tree, a few were laying eggs in cracks in the trunk. I collected 22 flies out of possibly three times that number flying around and on searching the ant-infested trunk, I found 2 **Xylotrechus** beetles about a foot above ground level. It was impossible to assign any particular hole as the exit hole of the beetles, because the trunk was riddled through and through by black ant tunnels.

The next day, June 13, the original station was inspected and 8 flies and 2 **Xylotrechus** removed from the three poles; an end pole had a new emergence hole but no beetle on it.

The same day, some dying poplars on a neighboring station some 200 yards away, were inspected and one **Xylotrechus** was found; there were no flies to be seen, on or near the trees.

At this time I was called to Lytton and did not return to the Chilcotin stations until July 3rd, when only one fly was to be found anywhere, and no beetles. To my surprise the emergence holes of the beetles in the posts had disappeared, and I found that during my absence the telephone repair gang had travelled the line and had pulled up these three posts, had cut off the portions sunk in the ground, and had replaced them with the areas containing the beetles holes, some three feet in ground. The telephone line had been installed in 1912 and in the following 19 years, for the repair gang to come and rebury my three poles only, out of the miles of poles on either side, seemed a cruel stroke of luck. However, I chopped up the rotten sawed-off basal parts and found 27 beetle larvae . . . mostly in one stump, the central one. These I packed in a quantity of the punk from which they came and took them to Lytton where, in a frenzy of grasshopper control measures, I forgot them for several days and on opening the container, found them all mouldy and flaccid. In my wish to rear them, I did not pickle or dissect any for fly larvae inside them.

These observations serve as additional short chapters to two previous papers presented before this Society, tieing the two subjects together . . . the one on "Beetles emerging from prepared timber after a period of years" and the other on the egg-laying habits of these Nemestrinid flies. To the first topic I now make this addition . . . here we have evidence of

beetles of two genera and two species **Asemum atrum** Esch. and **Xylotrechus obliteratus** Lec, emerging from dressed fir telephone poles at a distance of not more than 4 inches above ground level (with one exception of one pole only, of 14 inches), the poles in question having been installed 19 years previously. Either the larvae were already in the poles when these had been cut and had been undergoing development for at least 19 years, or else the parent beetles had laid eggs in them after they had been dressed, dried and posted. The latter suggestion is probably the correct one and is another link in my contention that some individuals at any rate, of the wood-boring families **Cerambycidae** and **Buprestidae** are capable of starting a new generation by ovipositing on dressed and drying timber and that the larvae on hatching from the eggs, are capable of establishing themselves on such wood without having to feed first on bark, cambium and sap wood, as has hitherto been considered necessary. It means also, that the eggs had been laid at, or near, ground level, and the grubs had worked downwards to feed and develop—and upwards again to pupate and emerge as beetles. How long this larval period lasted, it is impossible to say.

It is true that evidence is only circumstantial; I did not see the beetles emerging from these holes. The lone specimen of **Asemum atrum** may have been a transient; I do not think the others were. However, finding freshly-emerged beetles resting alongside of white, newly-cut, oval holes, is fairly strong circumstantial evidence.

Concerning the second phase of this evidence, we cannot fail to link together the finding of the beetles **Asemum atrum** Esch. and **Xylotrechus obliteratus** Lec. emerging from much-tunnelled and perforated poles—with the flies **Rhyncocephalus sackeni** Will. found in large numbers ovipositing in cracks in these poles, and in a dead **Populus tremuloides** from which I took two beetles. The inference is that the larvae of the flies are parasitic upon the larvae of the beetles named above or at least upon one of them, **Xylotrechus obliteratus** Lec.

Again, the evidence is only circumstantial. However, men have been hanged on much less evidence than this.

Acknowledgment.

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REFERENCE:—

Williston, Manual of North American Diptera.