

Rhopalomyia ptarmicae, a bud gall of *Achillea ptarmica* (Sneezewort) in the Outer Hebrides

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An unusual growth posted on the Curracag facebook page on 27 June 2020 by MG (Fig. 1) posed a challenge, even to say what the plant was. The grapevine then cranked into action and PAS recognised it as a gall infecting Sneezewort (*Achillea ptarmica*), caused by a cecidomyiid fly *Rhopalomyia ptarmicae* (Vallot 1849).

The infected plants were growing in rough, boggy ground on a croft in Smerclate, South Uist, almost hidden by grass and rushes. Once you knew what you were looking for, it was soon possible to spot the familiar stem and leaves of Sneezewort, but with crowns transformed - an array of exaggerated sepals, holding tightly bound, almost fluffy heads that looked more like small cauliflowers than anything else.

On July 1st, BN joined MG to search the area. There were two patches of Sneezewort about 20 metres apart with maybe five or six affected plants in each area. The galls were in different stages of development. Some were quite small others well developed and some looking as though the plant had regained control with fresh flower heads growing around the collapsed gall.

BN selected a well-developed gall, enclosed it in a purpose built bag and zipped it up in the hope of capturing one of the flies and another was taken to be grown on in an enclosed pot. A third, where the gall had broken off was also collected.



Figure 1 (left): Galled plant of *Achillea ptarmica*, Smerclate. Photograph © Melanie Groundsell.
Figure 2 (right): Gall on *Achillea ptarmica*, Berneray (see text for details).
Photograph © Paul A. Smith

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This was the first record which had made it onto the OHBR database, but there have been some earlier reports. Heslop Harrison, a botanist who spent many years recording plants and beetles in the Outer Hebrides, made the first report (Heslop Harrison 1956) from Miabhaig in S Harris (approx NG19N) in 1955 or 1956, describing it as “the only known colony”. It is also included in Waterston’s (1981) synopsis of non-marine invertebrates of the Outer Hebrides and Peter Skidmore’s (2009) review of diptera of the Western Isles (which covers more than the Outer Hebrides), though in both cases probably based on Heslop Harrison’s record.

PAS had also seen it before in two locations, near Stornoway and on Berneray (in the Sound of Harris):

- Loch Airigh na Lic, roadside, 50 m, NB405343, 20 Aug 2011, PAS, Richard Pankhurst, Alison Wilson & Louise Marsh, on *A. ptarmica*.
- Berneray, marsh, 10 m, NF921818, 15 Aug 2018, PAS, John Faulkner & Geoffrey Hall on *A. ptarmica* (Figure 2).

NBN (<https://species.nbnatlas.org/species/NBNSYS0000028413>) includes a scatter of records, mainly from Scotland, with a few records from England & Wales. The nearest to the Outer Hebrides are from NW Skye. There are also further published records not on NBN, including one from Rum (Wormell 2006), and a search of the web shows many additional records, so *R. ptarmicae* is clearly widespread.

The cecidomyiidae is an extremely diverse family of small flies, and there is little information about the adults, with most records being derived from the galls. BN therefore took up the challenge and visited the latest site to investigate in more detail. Figure 3 shows the grub in the cut open gall – an orange grub in line with the description in the gall key (Redfern, Shirley & Bloxham 2011). BN also managed to rear the adult from the gall, and Figure 4 shows the colourful wee beastie – a female with an ovipositor.



Figure 3: *Rhopalomyia ptarmicae* grub in cut gall, Smerclate.

Figure 4: Adult female *Rhopalomyia ptarmicae* emerged from the cut gall.

Photographs © Bill Neill.

Vallot, who first described the species in 1849, noted that the larvae were parasitized by a tiny chalcid wasp (chalcids are often brightly coloured and metallic), and (in general) galls quite often contain inquilines – species which use the gall tissue but are unable to cause a gall themselves. So we were interested to see what would emerge, and BN bagged a specimen (Figure 5) to capture any adult insects. On 9 July the bag contained a further adult *R. ptarmicae* (Figure 6), with a narrower abdomen and no ovipositor, so a male; the difference in the sexes is striking. The bag also contained a tiny chalcid (Figure 7). Identifying chalcids is a challenge, and this one is still awaiting naming by an expert.



Figure 5: Netted gall to catch emerging adult insects.

Figure 6: Adult male *Rhopalomyia ptarmicae* emerged from netted gall.

Photographs © Bill Neill.



Figure 7: Chalcid wasp no. 1. Live specimen on left, and dead specimen on the right showing hairy wings with reduced venation. Photographs © Bill Neill.

But the excitement was not yet over. On 29 July a different chalcid species also emerged from the galls (Figure 9), with a metallic green body and a long ovipositor. This one too is awaiting a name, so we will follow up with the end of the tale in a future *Hebridean Naturalist*. And the moral of the story is to keep your eyes open for the interesting and unusual, because from such galling observations interesting knowledge can emerge.



Figure 9: Chalcid wasp no. 2. Note the long ovipositor. Photograph © Robin Sutton

References

- Heslop-Harrison, J.W. (1956) Botanizing in the Outer Hebrides in 1955 and 1956. *Proceedings of the University of Durham Philosophical Society* 12: 141-149.
- Redfern, M., Shirley, P. & Bloxham, M. (2011 second edition) *British Plant Galls*, Field Studies Council, Preston Montford
- Skidmore, P. (2009) A review of the Diptera of the Western Isles of Scotland. *Dipterists Digest* 15: 99-194.
- Vallot, M. (1849) Eclaircissements relatifs a plusieurs passages des mémoires publiés par Réaumur. *Mémoires de 539 Académie des Sciences, Arts et Belles-Lettres de Dijon* 81-111
- Waterston, A.R. (1981) Present knowledge of the non-marine invertebrate fauna of the Outer Hebrides. *Proceedings of the Royal Society of Edinburgh* 79: 215-321.
- Wormell, P. (ed.) (2006) Scottish entomologists' survey of Isle of Rum 2000. *Glasgow Naturalist* 24: 125-153.