KINGHORN BIODIVERSITY MONTHLY REPORT – JUNE 2024 by Robert Mill



Swan Feather Dwarf moth (*Elachistes argentella*) on Goosegrass flower-stalk, 21st. New Loch record and first local record since 1978. See text, p. 3. Photo Robert Mill.

In contrast to May, June 2024, especially the first two weeks, was much cooler than average, although the east of Scotland including Fife ended up with average temperatures by day and night (Met Office, 2024a). This was largely due to a week-long warmer spell from 19th-27th in which 23rd-25th were particularly warm. Temperatures then fell back below average again so that in our area only 1st-3rd, 19th-27th and 30th were warmer than an average June (Met Office, 2024b). As well as being predominantly cool, it was also windier than average (Met Office, 2024b), which added to the chilly feel. However, most of Britain, including our area, was significantly drier than the June long-term average (Met Office, 2024a,b). The rain gauge at Kinghorn Loch only collected 37.8 mm, compared with 68.8 mm last June and the almost identical long-term average of 68.6 mm. About one-third of this total, 13.8 mm, fell on a single day (13th: SEPA, 2024). We received near-average sunshine with the East Neuk faring slightly better (Met Office, 2024a,b).

The plunge of unseasonably chilly Arctic air in the first half of the month, coupled with the wind which not only deters insects from flying but also makes close-up photography of them and plants frustratingly difficult, did not tempt me outdoors much and most of my five Loch visits, other than one on 5th, were during the more favourable weather (19th, 21st, 23rd and 24th). However, Paul Williams made eight visits spread pretty evenly through the month although neither of us recorded at the Loch in the last few days. Nevertheless, another twelve species were added to the Loch list during June: 1 moth, 3 flies, 3 beetles, 1 bug, 1 other insect (the Loch's first record of any species of thrips), 1 mite, 1 other animal species and 1 flowering plant. I decided to re-classify Marsh Thistle (Cirsium palustre), said to have been found at the Loch during the 2018 BioBlitz, as doubtfully or wrongly recorded, because I have not found it myself anywhere around the Loch since; it looks quite similar to Welted Thistle (Carduus crispus) which is widespread and at present I am regarding the BioBlitz record of Marsh Thistle as a misidentification of that. Consequently, the net increase in the Loch list during June was 11 species, from 1,714 on 31 May to 1,725 on 30 June. A few creatures remain unidentified.

AROUND THE LOCH Birds: 55 bird species were recorded on and around Kinghorn Loch during June, one more than in May. Apart from the resident ducks, geese and swans, Paul Williams saw three **Tufted Ducks** on 6th, while from the far end of the track to the fishing stance on the SE shore of the Loch on 24th I saw the drake **Red-breasted Merganser** that has been visiting the Loch off and on over the last month or two. Hard on the heels of last month's Red-legged Partridge, Paul Williams (PW) saw a **Grey Partridge** in the horse pasture next



Grey Partridge (*Perdix perdix*) among buttercups in the horse pasture near Kinghorn Loch, 20th. Photo Paul Williams.

to the Craigencalt access track from Red Path Brae (20th). There are a few other recent records from the Loch area but mostly from Rodan Braes. Paul's bird may well have flown across from Mid Mire where I have accidentally flushed them a couple of times so far this year. **Moorhens** and **Coots** have both raised their first brood of chicks of 2024, but so far the **Great Crested Grebes** have not been so successful. The pair at the west end have raised a single 'humbug' and the female is currently on the nest again so here's hoping for a second brood in due course. The other pair at the sluice end appeared to abandon their breeding attempt. No **Little Grebes** were seen on the Loch during June and there were no **wader** records. A single **Black-headed Gull** returned at the end of the third week of June and was seen by PW on 20th and myself the next day, when a single **Great Black-backed Gull** was also present. A few days later, Paul saw a single **Swift** over the Loch, the first Loch record this year (24th). A single **Cormorant** was seen on several occasions, as was a **Grey**

Heron. Buzzard was recorded on four dates and Kestrel on six; on 5th, Jacqueline Davidson (KDWG) took a marvellous photo of a Kestrel hovering over the Loch that can be seen on the KDWG Facebook page by members of this private Facebook group. On 11th, PW saw two Great Spotted Woodpeckers, the first Loch record for a few months. Skylarks were heard or seen on nine occasions throughout June. The only record of Sand Martin was on 11th (PW) and there were no sightings of House Martin but Swallows were present all month, as were Willow Warblers, Chiffchaffs and Blackcaps. PW noted a Sedge Warbler on 3rd and Common Whitethroat was recorded by myself or Paul on 11th, 19th and 24th. Another bird not recorded for some months, Goldcrest, was spotted on 24th by PW. Both Grey and Pied Wagtails were seen on several occasions while a Meadow Pipit was noted by PW on 17th. Linnets were also quite often seen. Yellowhammers were recorded by PW on 17th, 19th and 20th, while on 19th I was delighted to both hear and see a male Reed Bunting singing at the top of a bush in the KCLA's ecocemetery land adjacent to TEC's land, only a few minutes' walk from my home, and PW also noted one on 24th. The full list of birds recorded at the Loch during June 2024, in the systematic order of the British List (BOU, 2022) rather than alphabetical order as in previous reports, is: Greylag Goose, Farmyard geese hybrids, Mute Swan, Mallard, Tufted Duck, Red-breasted Merganser, Grey Partridge, Pheasant, Swift, Feral Pigeon, Wood Pigeon, Moorhen, Coot, Great Crested Grebe, Black-headed Gull, Great Black-backed Gull, Herring Gull, Lesser Black-backed Gull, Cormorant, Grey Heron, Buzzard, Great Spotted Woodpecker, Kestrel, Magpie, Jackdaw, Carrion Crow, Coal Tit, Blue Tit, Great Tit, Skylark, Sand Martin, Swallow, Willow Warbler, Chiffchaff, Sedge Warbler, Blackcap, Common Whitethroat, Goldcrest, Wren, Starling, Song Thrush, Blackbird, Robin, Tree Sparrow, Dunnock, Grey Wagtail, Pied Wagtail, Meadow Pipit, Chaffinch, Bullfinch, Greenfinch, Linnet, Goldfinch, Yellowhammer, Reed Bunting.

Mammals, amphibians and fish: Paul Williams saw Brown Hares at Rodan Braes (12th) and nearer the Loch on 17th, as well as **Rabbits** on 3rd, 19th and 24th and two **Grey Squirrels** on 3rd. On 19th, I saw a **Brown Rat** running across the vehicle access to the Loch sluice from the B923. **Roe Deer** were seen on four occasions, with seven present on 12th (PW). Single **Bats** were seen by PW on 12th and 17th; that on 17th was still hunting after 9 a.m. by which time it should have been back at its daytime roost – no doubt because the

unseasonably cold weather meant that it was not getting enough food at night from catches of moths and other nocturnal insects. Some days later, when the weather had warmed up significantly, Paul (and also my wife Andrea) saw numerous bats at the Loch, and on the night of 24th Paul was able to identify these as **Soprano Pipistrelles** using a bat detector. Once again, no amphibians or fish were reported.

Invertebrates ('minibeasts'): At 51, the total number of invertebrate species recorded at the Loch in June was significantly down on May's figure of 83 – a combination, no doubt, of fewer visits and unseasonal weather. Ten, however, were new Loch records (NLRs) and some others were the first for several years. Five **butterfly** species were



Large White (*Pieris brassicae*), 11th. Photo Paul Williams.

noted during June: **Orange Tip** (11th, Paul Williams), **Large White** (2, 11th, PW: see photo, p. 2: the only previous records of which I am aware are unlocalised ones in NBN Atlas, 2024a from both Loch monads, NT2587 and NT2687), **Small White** (19th, several, by myself), **Speckled Wood** (11th, PW; 23rd, myself) and **Ringlet** (24th, myself). Three **moths** were also seen during June. One of these was an NLR: a beautiful little white moth found on a Goosegrass stem on a grassy bank beside the Craigencalt access road on 24th (see photo, top of page 1) was an example of *Elachista argentella* (**Swan-feather Dwarf**, also known as **Silver Grass-miner**). Not only was this a new Loch record but checking the National Biodiversity Network database revealed that there is only one previous record from the 10-km OS grid square NT28. This dates back almost fifty years to 1978, and was also from an unspecified locality within the Kinghorn/Pettycur/ Craigencalt area covered by the tetrad NT28T (NBN Atlas, 2024b). Fife appears to be one of several Scottish strongholds for this species, others being Aberdeenshire/Moray, Skye/southern Western Isles, Oban/Inner Hebrides and Dumfries & Galloway. The other moths seen during June were **Nettle-tap** (21st) and **Yellow Shell** (21st, 24th).



Kinghorn Loch invertebrates, June 2024. A, The somewhat misleadingly named Clover Thrips (Haplothrips leucanthemi), 19th, NLR & first Loch record of any thrips species. B, Pied Plumehorn (Volucella pellucens), 19th. C, Broad Centurion (Chloromyia formosa), 21st, first Loch record since 2018. D, Hooded Dryomyza (Dryomyza anilis), 5th, NLR. E, Long-horned Black Legionnaire (Beris geniculata), 21st, NLR. F, 10-spot Ladybird (Adalia decempunctata), 19th, NLR. G, Harlequin Ladybird (Harmonia axyridis), 19th, NLR. H, Guelder Rose leaf damaged by Viburnum Beetle (Pyrrhalta viburni), 24th, NLR. J, Red Velvet Mite (Trombidium aff. holosericeum), 19th, NLR. All photos Robert Mill.

Eight species of Hymenoptera were recorded, six of them bumblebees. These included three sightings of **Tree Bumblebee** (*Bombus hypnorum*) on 19th, 21st and 24th, and a very hairy **White-tailed Bumblebee** (*Bombus lucorum*) on 24th. The other two were **Honey Bee** (*Apis mellifera*) (19th) and an unidentified species of *Ectemnius*, a genus of square-headed digger wasps that landed very briefly (too briefly for a photo) on an alder bush while I was photographing ladybirds, also on 19th.

In stark contrast to last month, only four **hoverflies** were recorded during June: **Pied Plumehorn** (*Volucella pellucens*) on 12th by Paul Williams and on 19th by myself, **Marmalade Hoverfly** (*Episyrphus balteatus*) and **Narcissus Bulb-fly** (*Merodon equestris*) on 21st and **Plain-faced Drone-fly** (*Eristalis arbustorum*) on 24th, the latter three species by myself.

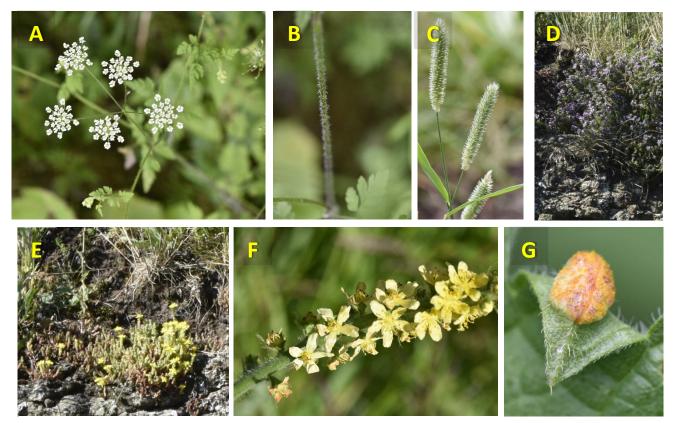
Thirteen other **flies** were also recorded, three of them being NLRs: **Hooded Dryomyza** (*Dryomyza anilis*) on 5th, the cranefly *Tipula lunata* (21st) and **Long-horned Black Legionnaire** (*Beris geniculata*) on 21st. In addition, on 21st both **Broad Centurion** (*Chloromyia formosa*) and one of two species of *Thricops* (either *T. longipes* or *T. nigrifrons*) were recorded for the first time since The Ecology Centre held a BioBlitz six years ago in June 2018. Another less-commonly found species was the long-legged fly *Dolichopus ungulatus* (24th). The leaf-mines of four species were also found.

Four species of **bug** were found, with the green leafhopper *Empoasca vitis* being an NLR. **Common** Froghopper 'spittle' was everywhere, while both a nymph of Common Green Capsid (Lygocoris pabulinus), looking remarkably like an aphid, and an adult Potato Capsid (Closterotomus norwegicus) were seen on 21st. Five beetles were recorded during June, three of them being NLRs. Two of the NLRs were ladybird species, both found on the same alder tree on 19th: 10-spot Ladybird (Adalia decempunctata) and the larger, rather unwelcome invasive alien, Harlequin Ladybird (Harmonia axyridis). The latter species, a native of eastern Asia, has spread very rapidly through the UK since 2004 and indeed is regarded as the fastest spreading of any UK invasive alien. So far, there are not many records from Fife in the NBN Atlas but the nearest is in the neighbouring 10-km square NT18 (Dalgety Bay, Aberdour etc.) so it is unsurprising that it has now reached Kinghorn. Sadly, it consumes almost every British native ladybird species wherever it is found, except for some reason the common Seven-spot Ladybird, resulting in big declines in the populations of many of Britain's native ladybirds. The third beetle NLR, Viburnum Beetle (Pyrrhalta viburni), was, despite searching, not actually found as such but was identified from the extensive characteristic damage to Guelder Rose (Viburnum opulus) leaves caused by its larvae (24th). Both Nettle Weevil (Phyllobius pomaceus) and Nettle Pollen Beetle (Brachypterus glaber) were found on 21st. Common Blue Damselflies were often seen. June's final insect sighting was not only a new Loch record but the first of any species of its insect group: Haplothrips leucanthemi, whose English name is 'clover thrips' yet was found abundantly, on both 19th and 21st, on oxeye daisy flowerheads (Leucanthemum vulgare – hence the thrips' scientific epithet leucanthemi)! Three arachnids (spiders, mites etc.) were found during June, all of them mites: a Red Velvet Mite (Trombidium aff. holosericeum) on 19th (NLR) and the gall mites Eriophyes exilis on Small-leaved Lime (23rd) and Eriophyes laevis on Alder (19th and 24th). Brown-lipped Snails were found on 19th and 24th and on the latter date Great Pond Snail and a large as yet unidentified leech species were found at the jetty during a chance meeting with Adam McIntosh of Craigencalt Farm. During conversation he mentioned that he has recently started getting 'swimmer's itch' after swims in Kinghorn Loch. This has various causes, the commonest in Scotland being an allergic reaction to the fluke genus Trichobilharzia (family Schistosomatidae). This has two principal hosts during its life cycle – Great Pond Snails, and Anatidae (ducks, geese and swans), both of these being abundant at the Loch. Hence, Trichobilharzia was added as June's final new Loch record among the animal groups.

Flowering plants and ferns:

185 wild or naturalised plant species were recorded around the Loch during June, of which 154 were in flower at some time during the month and the other 31 in a vegetative state, in bud, or with young or ripe fruits. Fifty cultivated plant species were also noted, of which 48 were in flower. The only new Loch plant record in

June was **Rough Chervil** (*Chaerophyllum temulum*), an umbellifer that looks rather like Cow Parsley but begins to flower as Cow Parsley is coming to an end; unlike Cow Parsley, it has dense short hairs on the stems.



Kinghorn Loch flowering plants and fungi, June 2024. A & B, Rough Chervil (Chaerophyllum temulum), 24th, NLR: A, flowers; B, stem showing dense hairs. C, Smaller Cat's-tail (Phleum bertolonii), 24th, third Loch location. D, Wild Thyme (Thymus drucei), 23rd, second Loch record. E, Two clumps of Biting Stonecrop (Sedum acre), 23rd at one of the first two known genuinely wild locations near the Loch.

F, Agrimony (Agrimonia eupatoria), 23rd. G, Nettle Rust gall (Puccinia urticata), 21st. All photos Robert Mill.

I suspect that I have overlooked this species in previous years. I found it in two locations on 24th. Also notable were a third location (24th) for **Smaller Cat's-tail** (*Phleum bertolonii*), a second for **Wild Thyme** (*Thymus drucei*) on 23rd and the first two localities in genuinely wild situations for **Biting Stonecrop** (*Sedum acre*) on the same date. The latter has been known from the jetty area since I started recording in 2021 but whether it is truly wild there is rather doubtful. The two new sites are both on calcareous outcrops on private farmland that I scan with binoculars to record at least some of the plants that are there; the second Wild Thyme locality was also on one of these outcrops, as was May's Hairy Rock-cress record.

First-flowering dates at the Loch noted for selected flowering-plant species in June 2024, with 2023 dates in parentheses, were: Common Knapweed, 19th (30th); Water Forget-me-not, 19th (8th); Amphibious Bistort, 19th (9th); Ragged-robin, 19th (18th); Bittersweet and Hedge Woundwort, 19th (14th); Field Thistle, Meadow Crane's-bill, Common Ragwort, Feverfew and Hedge Bedstraw, 19th (22nd); Tufted Vetch, 19th (23rd); Agrimony, 21st (22nd); Wild Carrot, 21st (23rd); Nipplewort, 21st (14th); Brooklime, 21st (1st); Lady's Bedstraw, 23rd (6th); Field Scabious, 23rd (May 26th); Meadowsweet, 24th (30th); Restharrow, 24th (22nd); and Self-heal, 24th (July 4th). Most of these dates were similar to 2023 but a few, such as Self-heal, were significantly earlier while some, particularly Field Scabious and most waterside plants other than Meadowsweet, were up to three weeks later.

Cryptogams

Ten fungi were recorded during June. All were plant pathogens such as rusts, smuts, powdery or downy mildews or other leaf spots. One that caused me some puzzlement was *Puccinia urticata* (Nettle Rust). This usually causes deep bright orange, roughly cylindrical galls on the stems and leaf stalks of Stinging Nettle. However, the gall I found on 21st (see photo G on this page) was on the leaf margin, egg-shaped and much

paler though still with an orange tinge. Five lichens, one bryophyte, one terrestrial alga and **European mountain ash ringspot-associated virus** were also noted. None of June's finds were new Loch records.

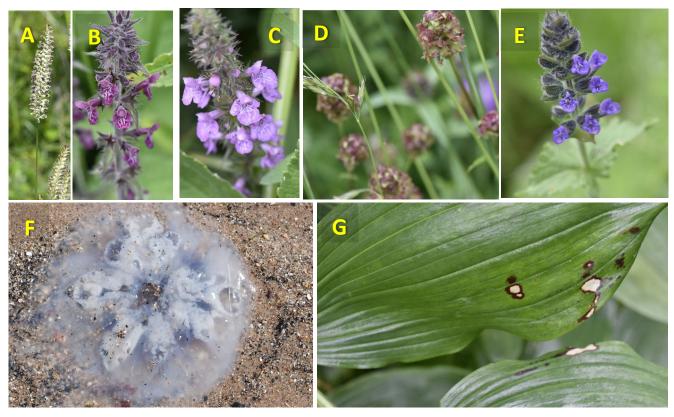
VILLAGE, BEACHES AND COASTAL PATH



Kinghorn area insects, June 2024. A, Common Blue, between Kinghorn and Seafield Tower, 19th. B, Northern Brown Argus, near Seafield, 25th. C, Wall Brown, near Seafield Tower, 2nd. D, Brimstone Moth, Seafield, 25th. E, Silverground Carpet, Burnside Path, 25th. F, Meadow Plant Bug, Burnside Path, 25th, first record for grid square NT28. Photos: A-D Paul Williams, E & F Robert Mill.

Bird and mammal sightings around Kinghorn during May were mainly by Paul Williams (PW), with additional ones by Hawk Gula (eBird; 2nd), Jon Penman (eBird; 3rd), and myself. There were no sightings made in our area during June by the Fife bird recorder, Graham Sparshott. Unlike April's Marsh Harrier and May's Spoonbill, no especially noteworthy unusual birds visited the Kinghorn area during June. Other than Eiders which remained numerous all along the coast, there were few sea ducks offshore. There was just one sighting of Common Scoters: only six, on 6th (PW). Goosanders were seen on three occasions, with a high count of at least 93 at Seafield (27th, PW) being particularly notable. The only Black-headed Gull records were by PW between Kinghorn and Seafield (25th, 27th). Sandwich Terns were often seen off the coastal path, and single Common Terns were at East Braes on 17th and 25th, with two also at Seafield on the latter date. Guillemots (2nd & 27th, PW) and Razorbills (3rd, Jon Penman; 6th & 18th, PW) were occasionally seen off the coastal path, as well as Puffins on five occasions (3rd, Jon Penman; 17th, 18th, 19th & 27th, PW). I counted a minimum of 14 Fulmars on the cliff at Kinghorn (12th) and PW also saw them off the coastal path on 2nd, 25th and 27th. Gannets were frequently seen all along the coast, with 11 counted by Hawk Gula (3rd). Grey Herons were also seen regularly along the coastline. A Buzzard was at Grange Hill on 3rd. Later in the month I found a pile of feathers at the Kissing Trees Lane end of Mid Mire that I assumed to be the remains of a Sparrowhawk kill (23rd). Swallows and House Martins were seen all month at Seafield. Kestrels were seen hovering over Kinghorn beach (Sam Tedcastle, KDWG, 9th) and at Grange Hill on 17th (PW). Sedge Warblers, Willow Warblers Chiffchaffs, Blackcaps and Common Whitethroats were all along the coastal path and PW also recorded Grasshopper Warblers near Kinghorn (9th, 19th). Single Lesser Whitethroats were also recorded in the East Braes area on several dates. A Grey Wagtail was at Seafield on 19th and Pied Wagtails on 18th & 27th (PW) and Linnets were frequently seen. I saw and heard a Reed Bunting singing at Mid Mire on 23rd and PW also regularly recorded them along the Kinghorn—Seafield Tower section of the coastal path, where he also noted a Yellowhammer on 25th. The only land mammal records in the Kinghorn area during

June, all by PW, were of **Roe Deer** on 19th (two at Mid Mire and another two at Grange Hill) and **Brown Hare** at Grange Hill on 12th. No **marine mammals** were reported.



More Kinghorn area biodiversity, June 2024. A, Crested Dog's-tail grass (*Cynosurus cristatus*), Mid Mire, 23rd. B, Hedge Woundwort (*Stachys sylvatica*), Burnside Path, 25th. C, Marsh Woundwort (*Stachys palustris*), Burnside Path, 25th. D, Salad Burnet (*Sanguisorba minor*), Burnside Path, 25th. E, Wild Clary (*Salvia verbenaca*), Burnside Path, F, Blue Jellyfish (*Cyanistes caerulea*, Seafield, 3rd. G, Phyllosticta cruenta leaf spot on Solomon's-seal (*Polygonatum x hybridum*) at Kilcruik Road access to Donkey Field Path, 25th All photos Robert Mill.

Seven different butterfly species were recorded around Kinghorn during June, a pretty good total considering that for much of the month the weather was unfavourable for insect activity in general. There were no further sightings of Holly Blue but a single Common Blue was seen along the Kinghorn to Seafield Tower section of the coastal path on 19th (PW) and Northern Brown Argus nearer Seafield on 25th, also by PW. Two more Wall Butterflies were near Seafield Tower on 2nd (PW). Speckled Woods were seen along the coastal path (from 17th, PW), and I saw at least four 'dancing' in the air at Castle Mount in the heart of the village on 28th. Meadow Browns and Ringlets were recorded by PW and myself from 23rd onwards in places like Mid Mire, Grange Hill and East Braes. Day-flying moth records included a Brimstone Moth and a Yellow Shell, both seen at Seafield by PW on 21st and 18th respectively, as well as a Nettle-tap and a Silverground Carpet that I saw along the Burnside Path on 25th. Few other notable insect records were made other than at Kinghorn Loch. The most interesting was a Meadow Plant Bug (Leptopterna dolabrata) along the edge of the Burnside Path on 25th. I did not actually see this during my walk but only noticed it at home when examining the photographs that I had taken. I had photographed an unfamiliar grass in the hope of identifying it, and I noticed the bug sitting on one of the grass florets. Since the main subject of the photo was the grass, the bug is slightly out of focus but was nevertheless easily identified from its shape and markings. Although a widespread species, already recorded in the neighbouring grid square NT18 coverng Aberdour etc., my 'accidental' record would appear to be the first for the Kinghorn/Burntisland grid square NT28. Now that I have recorded it along the Burnsde Path, it needs to be looked out for in other grassy places. A Summer Orbweaver spider (Metellina mengei) was seen along the Burnside Path on 25th, as well as galls on sycamore leaves caused by a gall mite, Aceria cephalonea. Along the coast, Blue Jellyfish were seen by me for the first time this year (3rd, Seafield) while a Common Starfish was found on Kinghorn beach (12th).

Kidney Vetch, Pignut and **Common Rock-rose** were still in bloom on the calcareous outcrop beside Kissing Trees Lane on 23rd and, since my last visit in May, **Lady's Bedstraw** and **Wild Thyme** had come into flower there, just as they were on similar outcrops near Kinghorn Loch.

Clumps of Seaside Daisy (*Erigeron glaucus*), Red Valerian (*Centranthus ruber*) and Snow-in-Summer (*Cerastium tomentosum*) coloured the cliff at the top of Kinghorn beach mauve, magenta and white (12th). Small patches of Salad Burnet and Wild Clary were re-found at previous sites along the Burnside Path (25th, 28th). Also there, within a few feet of each other, were both Hedge Woundwort and Marsh Woundwort. The differences in flower colour and markings could be easily compared (photos B and C, page 7). On the latter date, Common Mallow and Purple Toadflax were flowering on different patches of waste ground in the village.

On 25th a leaf spot was found on Solomon's-seal plants (*Polygonatum x hybridum*) by the track leading from Kilcruik Road to the Donkey Field Path. This was photographed and identified as *Phyllosticta cruenta*. There are no British records for this species at all in the NBN Atlas, but this may simply reflect under-recording and/or non-submission of records to NBN, as the species has been known to occur in the UK for at least 90 years (see account in Grove, 1935, p. 54).

References

British Ornithologists' Union (BOU (2022). The British List: a checklist of birds of Britain (10th edition). *Ibis* 164: 860–910. Grove, W. B. (1935). *British Stem- and Leaf-Fungi (Coelomycetes)* Vol. 1. Available online: *Phyllosticta cruenta* account at http://www.cybertruffle.org.uk/cyberliber/01209/0054.htm Accessed 11 July 2024.

MET OFFICE (2024a). Dry, cool and sunny June for the UK.

. https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/weather-and-climate-news/2024/dry-cool-and-sunny-june-for-the-uk accessed 2 July2024.

MET OFFICE (2024b). June 2024 Monthly Weather Report.

https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-pastevents/summaries/mwr 2024 06 for print.pdf Downloaded 8 July 2024.

NBN ATLAS (2024a). Human observation of *Elachista argentella* (Clerck, 1759) | Swan-feather Dwarf recorded on 1978. https://records.nbnatlas.org/occurrences/b35b951b-2c45-4a16-839a-b72aa6cf5def accessed 3 July 2024.

NBN Atlas (2024b). [Records of Large White Pieris brassicae from NT2587 and NT2687].

https://records.nbnatlas.org/occurrences/search?q=qid:1720762557266&fq=longitude:[-3.2060136718748997%20TO%20-3.1881608886719]&fq=latitude:[56.069488878134%20TO%2056.079453426064]&nbn_loading=true (NT2587: 2 records); https://records.nbnatlas.org/occurrences/search?q=qid:1720762557266&fq=longitude:[-3.1929674072266003%20TO%20-3.1751146240234]&fq=latitude:[56.070255423744%20TO%2056.080219773501994]&nbn_loading=true (NT2687: 24 records) accessed 12 July 2024.

SEPA (2024). Data for the Kinghorn Ecology Centre Rainfall Gauge, available online at https://www2.sepa.org.uk/rainfall/, accessed 2 July 2024.