

undergrowth being kept cleared out, so that outside of a few specimens of Carabidæ I got nothing there for my pains.

A little further on beneath a very old log my patience was rewarded by three specimens of *Lucanus cervus* var. *capra*—the variety with the short mandibles in the male. I later took the typical form, *L. cervus* Linné flying at dusk in the outskirts of Paris. Both of these latter I took at the same place exactly, the female one evening and the male the following evening. Both were on the wing, and I was attracted by their buzzing flight.

But to continue my history of this my first day in a new field, I proceeded on until mid-afternoon finding many old friends in a live condition more interesting than they had been in my collection. Everywhere on the deciduous trees were to be found swarms of *Melolontha vulgaris* and an unknown little weevil which also defoliated. I was just putting a pair of *Clivinia fossor* Linné into my vial when I noticed that the sun was low, and as I had to be on duty again at seven that evening it behooved me to hurry a little and return.

Thus closed my first experience in a strange land, and how I gloated over them when I packed them away that evening.

A REMARKABLE CASE OF HOMING INSTINCT. (HYMEN.)*

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August 31, 1919, was hot, dry, dusty and windy in Mandan, North Dakota, where the writer was spending the day. The wind was from the west, gusty, and at times almost reached the velocity of a gale.

Late in the afternoon as the writer was returning from a stroll, a flash of green from the grass beside the walk attracted his attention. A brief investigation disclosed the fact that a lady *Sphex* (or *Ammophila*)* had secured a green lepidopterous larva more bulky than herself and was trundling along with her prey swung beneath her body, one end of the larva being held in a firm grip by her jaws, the other supported in some manner by her legs. Its weight was clearly greater than that of the wasp herself, but she was evidently fresh and moved quite briskly at first.

She came out almost at once upon the cement walk that was being swept by the wind. When she felt its force she adopted the policy of least resistance and drifted before it for at least twenty feet eastward, running, walking and hopping in an effort to maintain her balance. For the time she was helpless. Finally she hove to and headed directly into the wind, going due west. Her progress was of course slow, but she persisted and managed to struggle along for a distance of about fifty feet, with occasional pauses for rest.

During this journey her prey must have shown signs of returning animation for at one point she stopped, adjusted her burden and, arching her slender waist, aimed her ridiculous little bulb of an abdomen directly downward. A few swift stings reduced her helpless victim to absolute submission, and during the remainder of the performance she had no more trouble of this sort.

After moving nearly fifty feet directly into the wind she seemed to realize

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*Determined by Dr. H. T. Fernald, of Amherst, Mass., as *Sphex vulgaris*.

something wrong and wheeling about went careering down the walk, driven by the breeze to the east. She slowed up as much as she was able, but just as she reached her former turning point an unkind gust struck and upset her, compelling her to let go of the worm while she struggled to her feet. The worm was carried half a yard beyond her and left in plain sight on the walk. She was bewildered for a few moments, then began an agitated search for the lost prize. Her eyesight was evidently of little use, for at first she walked about in an aimless manner but was soon travelling in circles like a dog locating a scent. As this produced no results she rose to wing and sailed above the walk, her long legs just trailing the surface of the cement as she flew. The circles gradually grew larger and she varied flying with running, always keeping close to the surface. The search appeared to be hopeless when all at once, in one of her wider sweeps, she managed to stumble across the outstretched worm. Instantly she straddled it, grasped it with her jaws and again headed west into the wind. Just why she spent so much valuable time chasing up and down this walk will always remain a mystery for, as subsequent history shows, she was merely wasting time and getting nowhere. But the facts are recorded as they occurred.

This excursion took her fully seventy-five feet into the wind, and she walked, hopped, ran and flew in short flights as if in haste to arrive somewhere. At brief intervals a short rest was taken, for the muscular exertion must have been tremendous in the teeth of the gusty wind with the load she was carrying.

Once more, and for the last time, she turned squarely about and headed east. She blew along in spasmodic fashion, now fast, now slow, seldom pausing even for an instant. At times she would run headlong for a yard or more, her abdomen held high in air and her long legs racing. Then she would make leaps of a foot or more, several in succession, then perhaps drag herself wearily along for a few steps as if tired out. For a hundred feet she drove with the wind to the east. Then, in some unknown way she got her bearings and turned directly into the grass lawn, moving south. This was really the most trying part of her entire trip, for although she was out of the wind she was at once involved in a jungle of tangled, close-clipped grass tufts through which she had to thread her way. Necessarily her route was far from being an air line since she had to accommodate herself to the surface obstructions and go around where she could not go through. This fact of itself must have embarrassed her in finding her destination, at least a human, like you or I, would undoubtedly have lost our way under similar conditions. But she kept steadily on, followed as closely by the writer as was deemed wise, although she appeared oblivious of his presence during the entire episode.

During her lawn journey she was first in the shade of one house, then of a second. Each time she emerged from the shade she topped and stretched herself in the grateful warmth before continuing. The second time she did this she released her victim and walked away a few steps. Returning, she almost immediately straddled the prize to pick it up but had evidently made the mistake of changing ends, for she promptly reversed her position and then seemed satisfied. Up to now she had been going mainly south but all at once changed her course and went southwest as if she were steering by some invisible star, and from that time until she reached her destination, held consistently on this new quarter. The vicious wind that blew directly across her line of march

precluded any theory of scent affording any aid to the wasp in reaching her burrow, and she certainly could see no landmark to assist her in steering her way.

Once an active grasshopper came bounding across her path and forced a change en route, a detour of a few inches. Later, another hopper, sitting in the grass near her route caught sight of her as she toiled toward him. With baleful eyes he glared at her, swung slowly about as she came closer and just as she passed him made a short, spiteful spring directly at her, giving her a violent kick and upsetting her completely. It was coarse comedy on his part, but might have proved tragedy for her. She meekly righted herself and trudged steadily on. Still further along, another wasp of the same species as herself crossed her track at right angles just ahead of her. She saw the newcomer, stopped short and flattened herself to the ground for a few seconds until her fellow raider had passed on.

At last, after crossing two lawns, two concrete walks leading to the houses she had passed, and going some distance into a third lawn, making fully one hundred feet of grass travel, she swung sharply at right angles and made a rapid run of about two inches. She was all animation now, dropped her load, jumped forward and seized in her jaws a pebble that lay before her. Its removal disclosed an opening in the earth down which she instantly plunged, to reappear almost as suddenly. The worm was grasped and dragged beneath the surface quickly. Twice more she came to the top and, sad as it seems, was captured the last time for the writer's cabinet.

This wasp with her heavy load had travelled in all more than 300 feet, had apparently lost her way at first yet had in some mysterious manner succeeded in steering herself with uncanny accuracy to her destination. How did she do it? It is possible but not probable that she had already been over the same route on foot and was merely following her own scent. But she appeared to enter the lawn in a haphazard manner, and any well-laid plans she may have had must have been much interfered with by the annoying wind as well as by the unexpected obstacles she encountered along the way. The mouth of her burrow was many feet from any prominent object that might have served as a landmark to guide her, and for nearly half an hour she was involved in a grass forest from which she could have seen but little of the outside world. All the while she acted as if absorbed in the petty details of the journey, but she must, in spite of this, have been feeling her way in some exceedingly definite direction and this super-sense, call it instinct or what you will, brought her to precisely the right spot.

These facts are a transcript of notes that were continuously recorded while following the wasp, and are neither coloured nor altered to make a good story.

At the recent meeting of the American Association for the Advancement of Science, held at St. Louis, the Council unanimously elected Dr. C. J. S. Bethune, Professor of Entomology at the Ontario Agricultural College, Guelph, a Fellow Emeritus "in recognition of his long and faithful membership."

Dr. Bethune has also been made an Honorary Life Member of the American Association of Economic Entomologists "because of his long membership in the Association and as a slight token of its appreciation of his work in Entomology."