Ornithology from the Tree Tops

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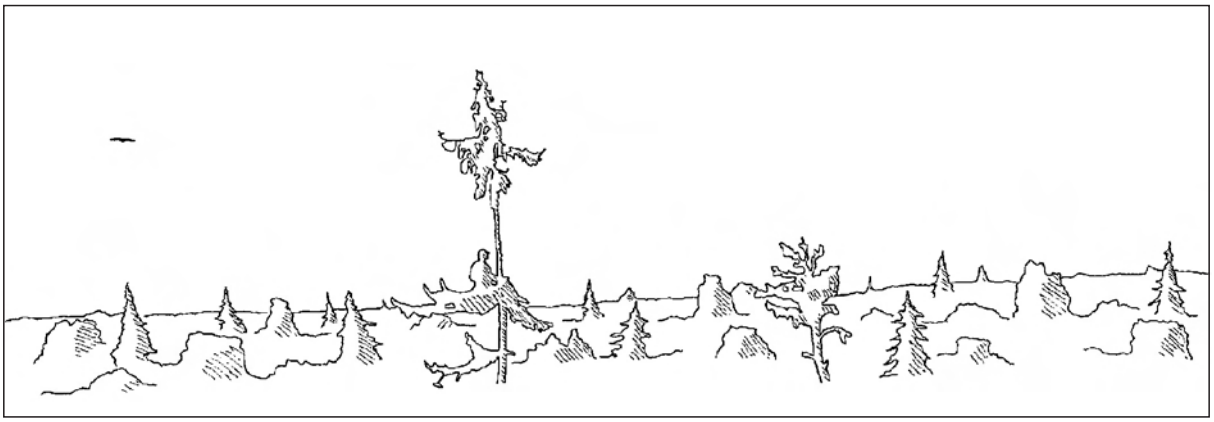

Ornithology from the tree tops

Decades ago, my days were steeped in fieldwork. No greater pleasure than to tramp the forests, search for nests and climb the trees from before sunrise till after sunset. The idea was to quantify numbers and reproductive performance of breeding birds in a fixed study plot, an ambitious plan to assess the impact of avian predation on the available avian biomass. A similar study had been done in the early 1940s, focusing on Sparrowhawk predation and on Chaffinch, Great Tit, Coal Tit and House Sparrow as prey species (Tinbergen 1946). Incidentally, part of that study took place in the same area where I was sweating away in youthful enthusiasm. Tinbergen's study was so detailed in its description of methods and results (with real data, and attention to deficiences) that I am able to compare number of pairs and prey choice of Sparrowhawks in specific sites with present-day results, despite a gap of 70 years. Were Tinbergen's study published in the 2000s, such a comparison would have been unthinkable of, simply because basic data would have been omitted, methods described haphazardly in general terms and results packaged in derived form and shrouded in statistics. No way that a recalculation of his data would have been possible.

One of the highlights of my repeat-survey turned out to be the Woodpigeon, an omnipresent bird bombarding my senses with persistent cooing, nest grunts, hisses, wing clapping displays, oderous smell (of pigeon droppings in nesting colonies), moulted feathers and commuting flights. Not what you might call a low-profile bird. The large number of plucks scattered across the woodland bore witness to the pivotal role this species played in the ecology of Goshawks. Numerically, the Woodpigeon was surpassed only by House Sparrow and Chaffinch, in terms of biomass by none. Those pigeons set me on the track of R.K. Murton, who studied this 'pest species' in the 1960s to figure out what mechanism was behind the boom in pigeon numbers in Britain (and how to reduce pigeon damage, because he was an 'economic ornithologist', yet well aware that problems caused by birds are to a large extent political and not scientific; nothing has changed, clearly). He wrote the Woodpigeon monograph in The New Naturalist series, then still in small format with stunning dust jackets, a volume full of first-hand field data. It seemed that English pigeons behaved like Dutch ones: by virtue of its feeding habits and specialisations the Woodpigeon was pre-adapted to take advantage of the extension of its feeding niche which was created when man introduced a system of arable farming with its associated superabundance of high-quality food. It took agricultural change, and a concomitant reduction in food supply, before numbers started to plummet (a farmer's dream, but a Goshawk's nightmare). Predators, including man, did not make serious inroads on pigon numbers. Or did they? In western Poland, Ludwik Tomiałojć found that predators did more than just remove the 'doomed surplus' of his pigeons. Fascinating material, based on meticulous fieldwork from the other side of the then still existing Iron Curtain (where farming, and life in general, had another dimension than in the West, perhaps accounting for the differences in Woodpigeon ecology, or…?). The ensuing snail-mail discussion led to frequent visits to Poland, fieldwork in the near-pristine Białowieża National Park (where Woodpigeons and Goshawks were scarce), and – in general – an appreciation of intelligent fieldwork, fact-based science and independent thinking.

Apart from the obvious focus on population regulation, these studies had several other common denominators: rigorous description of field methods

(a prerequisite for any intended replication and evaluation), use of self-collected field data (these people knew what they were talking about), transparent publication of results (allowing independent checks and recalculations) and critical assessment of potential biases. In short, good science. Such studies are still being published, but fewer and fewer. The journals, however, are filled to capacity as before, more journals than ever see the day of light. The floodgates have opened to another type of papers, rooted in computer technology. In conjunction with this shift, the authors increasingly tend to disregard a proper description of field methods and package their results in abbreviations, ANOVAs, GLMs and the like. It is not exceptional to read papers in which not a single biological fact is mentioned in the Results section; what the heck are they talking about? And what to think of the papers in which reality has been boiled down to testing some variables against some other variables, say trends against habitat choice, without any meaningful, or otherwise extremely simplified, biological background? Such exercises will likely give some statistically significant correlations, but then what? Without rigorous testing in the field, such papers are at best sterile attempts at explaining our environment. Poor science, that's what it is. Models and statistics are tools to help understand complex mechanisms, but their application only makes sense when embedded in deep, preferably first-hand, knowledge of the biology of species. Is it wonder that, for example, conservation measures have a much higher chance of success when based on thorough species-specific research than on the "put-it all-in-the-high-hat-and-see-what-comes-out-after-a-shake" approach. Although the "high-hat" studies are often advertised as attempts to make sense of complex systems, they do precisely the opposite: boiling down reality to crude parameters, ignoring the intricate life-history details which determine – often in unexpected ways – how life unfolds. Why, then, have these studies attained such popularity? Statistical power certainly comes into it, as do large databases (generated by others, enlarging the gap between fieldwork and analysis), the pressure to publish (fast science), a general decline of field knowledge among biologists (without checks imposed by real life, any outcome may be – and indeed is – sold as realistic), poor knowledge of past studies (in fact, an anomaly now that the availability of literature via the internet has never been better), gravitation towards the use of sexy statistics and models (out-ranking good-old fieldwork and descriptive studies by far), and editorial policies.

This, of course, is the worst-case scenario. Although the trend towards fast science is obvious, there are many shining examples to the contrary. Editors, referees and authors can also easily remedy some of the shortcomings of present-day ornithology: emphasize the importance of a good description of methods (permitting replication) and a transparant presentation of results, cut down on bogus language, favour storytelling (and relegate models and dense statistics to an appendix) and be more specific about biases and non-reporting. Without too much effort, it should be possible to write and publish good science, incorporating state-of-the-art analyses, yet remaining readable, meaningful and gripping. The old masters showed the way.

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