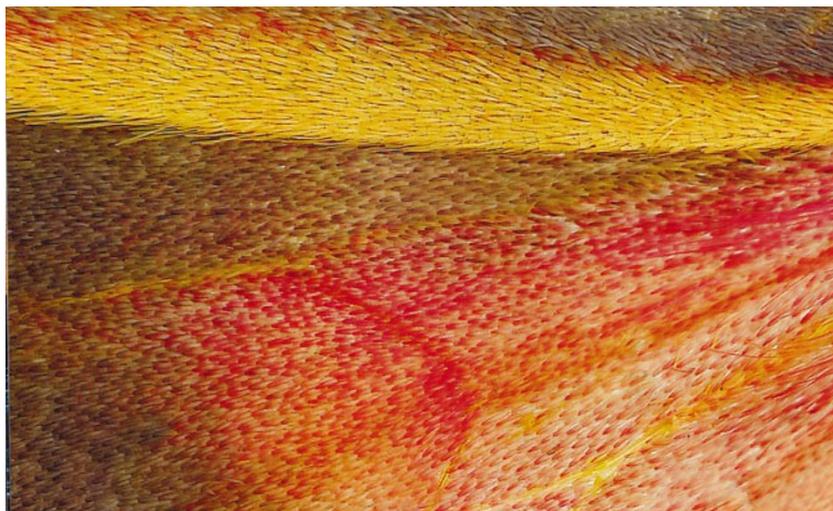


## Winging it

The colour and intricate detail of a moth's wing, like the one shown here from the painted lichen moth (*Hypoprepia fucosa*), is rarely appreciated. Although there are many more species of moths than butterflies, their nocturnal habit tends to keep them from view. Print-maker Joseph Scheer became interested in moths when he began using a high-resolution scanner to capture directly images of insects. The prints allow a view of the anatomical detail, previously only available through a stereomicroscope, across an entire specimen. Now Scheer has become something of an amateur lepidopterist, studying the diversity of the local moth populations as he collects more specimens for his prints, a selection of which can be seen in *Night Visions: The Secret Designs of Moths* (Prestel, £29.95).

Mary Purton



Ronald Ross (who got the prize) and Giovanni Battista Grassi (who was overlooked) over their relative contributions to knowledge of the role of *Anopheles* mosquitoes in malaria transmission. Nobel had made provision for each of his prizes to be shared by up to three people, although shared prizes in science were rare before the inter-war period and became the norm only after the Second World War.

Ulf Lagerkvist's discussion of the early medicine or physiology prizes is by far the most original part of his little book, which focuses on the lives of four pioneers of microbiology who all won the coveted prize: Emil von Behring, Robert Koch, Paul Ehrlich and Elie Metchnikoff. He describes the composition and deliberations of the early committees of the Karolinska Institute, the institution charged by Nobel with choosing the laureate in that loosely defined area. Johan

Erik Johannson, professor of physiology at the Karolinska, probably persuaded Nobel to add 'physiology' to the medical prize. Johannson campaigned ardently against the award of a prize to Paul Ehrlich, his reason being that Ehrlich's famous 'side-chain' theory of antigen-antibody interaction was too speculative and had been contested by Svante Arrhenius, the deserving winner of the 1903 prize for chemistry.

Grumbings about nationalistic bias surfaced early in international attitudes towards Nobel committees, and it must be said that the first two Scandinavian medical laureates, Niels Finsen (1903) and Allvar Gullstrand (1911), have not exactly remained household names, if they ever were. Johannson may have been unusual in raising the Scandinavian issue, and the internationalism of the early prizes is evident in all the sciences. The medical committee was also adventurous

in how it shared a couple of early prizes. Two of Lagerkvist's four principals — Ehrlich and Metchnikoff — split the 1908 prize, and the committee had already divided the 1906 prize between Camillo Golgi and Santiago Ramón y Cajal. In both cases, the recipients held diametrically opposed views on their research areas, Golgi and Ramón y Cajal publicly disputing the structure and function of neuronal elements. Ehrlich and Metchnikoff represented chemical and cellular approaches to the main determinants of immunity. In contrast, the early shared physics prizes went to people who had worked together, and the chemistry committee did not award a shared prize until 1929.

The other awkwardness that had to be resolved before

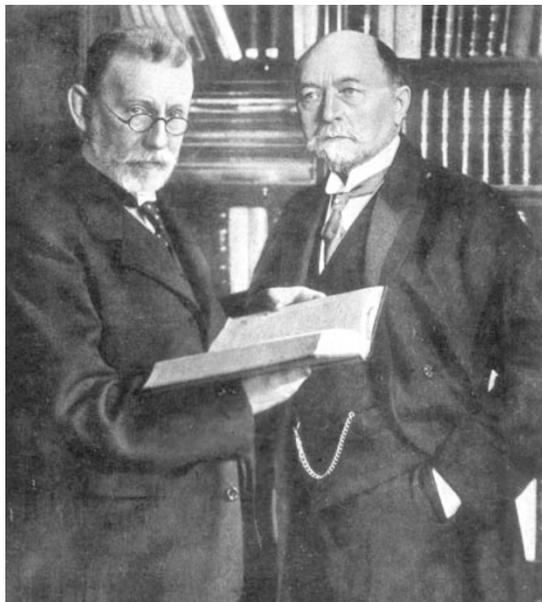
the first awards was Nobel's stipulation that the science prizes ought to be awarded for the best research 'in the preceding year'. Members of the awarding bodies knew that it takes time for the permanent value of a scientific discovery to be judged, and one of Nobel's original trustees, Ragnar Sohlman, managed to get the terms of the will relaxed. The Medicine or Physiology Committee seemed to have adopted a rough ten-year guideline, which explains why some of the early recipients were deemed eligible. Thus the first winner, von Behring, had done his important work on diphtheria (the word is irritatingly misspelled throughout Lagerkvist's book) roughly a decade earlier. By the time of the award he was engaged in largely fruitless research on tuberculosis.

Few would quibble with the decision to crown each of Lagerkvist's four pioneers. From the historical perspective, however, even the informal ten-year rule of the Committee creates problems. Koch was a giant of bacteriology in the 1870s and 1880s, but his later years, with tuberculin, the radical distinctiveness of bovine and human tuberculosis, and the wanderings in Africa investigating tropical diseases, did not produce the stuff of greatness. By 1908, when Metchnikoff received his prize, he was more obsessed with intestinal hygiene and longevity than with basic immunology. Only Ehrlich remained unremittingly dedicated to his laboratory craft.

Some of these issues have to be teased out of Lagerkvist's volume, which tries to do too much in too little space. The first half, a potted biographical history of medicine, has been done many times before, and should have been omitted in favour of a more extensive and subtle examination of the achievements and careers of his four principals, each of whom left permanent legacies. ■

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Nobel prizewinners: Paul Ehrlich (left) and Emil von Behring.