

Keynes has identified most, if not all, of the animals Darwin discusses, and these helpful identifications add greatly to the volume's value. Providing these identifications must have been an enormous undertaking.

The text is arranged in semi-facsimile, so that the sequence of Darwin's researches, and much of his excitement, is retained. The steps in his self-education in the biological sciences become much clearer. Nor did Darwin confine himself to strictly zoological observations. The phosphorescence of the sea, for example, transfixed him with its beauty, although he made sure also to strain a pint pot of the luminous water through fine gauze and put it under the microscope. "In the water were some minute Crustaceae of the genus Cyclops. I should not be surprised if these added to the effect." Many of his descriptions of land and maritime scenery are very fine. After the *Beagle* returned, Darwin used a number of these passages to enhance his *Journal of a Naturalist*.

The volume includes a scholarly and sympathetic introduction, and transcripts of the relevant catalogues of species that Darwin made during the expedition. Keynes has previously rendered signal service to Darwinists of all persuasions with his account of the *Beagle Record* and by transcribing anew Darwin's *Beagle Diary*. Here is another distinguished contribution that will illuminate this special region of Darwin's heart. ■

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Science in culture

Armed with anatomy

A nineteenth-century anatomy lesson for artists.

Martin Kemp

Occasionally, a single image sums up a long-standing enterprise in a way that no other does. François Sallé's painting *Anatomy Class at the École des Beaux Arts* perfectly encapsulates the professional instruction in anatomy that had been enshrined in the statutes of art academies since the sixteenth century.

The painting (below) shows Professor Mathias-Marie Duval, author of *Cours d'anatomie* (1873), demonstrating key features of superficial anatomy on a well-muscled man in working-class trousers, who is standing with confident poise on a podium. This particular lesson is concentrating on the arm. On the table are the bones of the arm and shoulder, while an outline drawing on the backboard shows a scapula and humerus from the rear. Duval extends the model's arm for scrutiny, having asked him to clench his fist to increase muscle and tendon definition. And he may be demonstrating the ingenious mechanism behind the rotation of the wrist, in which the radius and ulna are twisted across each other, and which involves the action of the biceps.

Most of the attentive audience of artists are seated within the horseshoe terrace of benches — arranged like one half of the traditionally round or elliptical anatomy theatres common in medical schools. As was the norm, there are no women present in the irredeemably masculine confines of the life room; female anatomy was only studied for those features that men did not share.

In the midst of the audience stands a vigorous écorché statue, probably a plaster cast from the body of a criminal which had been

flayed to disclose the muscles below the skin and subcutaneous fat. Carefully posed — one arm raised and one lowered, one fist clenched and one hand open, one leg stretched and the other bent — the écorché would have served as an anatomical exemplar outside the professorial lecture and during the very occasional dissection. It is likely that the upright cabinet beside Duval houses a full human skeleton; and the mounted skeleton of the bird among the jars and flasks on top alludes to the professor's interest in comparative anatomy in the tradition of the French zoologist Georges Cuvier.

Such anatomical teaching reflected the academic conviction that the human body could not be portrayed effectively as an expressive vehicle if the artist did not know how the mechanisms of motion and expression worked — from the inside out. The first Renaissance art treatise, Leon Battista Alberti's *On Painting* in 1435, set an anatomical agenda that was to endure for more than 400 years:

"First ... sketch in the bones, for, as they bend very little indeed, they always occupy a determined position. Then add the sinews and muscles, and finally clothe the bones and the muscles with the flesh and skin ... There will perhaps be some who will raise an objection ... namely that the painter is not concerned with things that are not visible. They would be right to do so except that, just as for a clothed figure we first have to draw a naked body beneath and then cover it with clothes, so in painting a nude, the bones and muscles must be arranged first, and then covered with appropriate flesh in such a way that it is not difficult to perceive the positions of the muscles."

Exhibited at the annual Salon of the Academy in Paris in 1888, where it was awarded a gold medal of the third class, Sallé's large canvas exults in the tradition even as it stands at its point of decline. Anatomy, like the discipline of perspective, was losing its grip on artists' imaginations. The creative vanguard of painting was moving decisively away from the canons of naturalism that had dominated for half a millennium.

The masterpiece by Sallé (c.1839–99), an artist little known today, was purchased directly from the Salon for the Art Gallery of New South Wales and immediately shipped to Australia. It remains less familiar than it deserves to be. ■

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Anatomy Class at the École des Beaux Arts is on view at the Hayward Gallery, London, until 14 January 2001, in the exhibition *Spectacular Bodies* (see *Nature* 408, 140; 2000).



CHRISTOPHER SNEE/ART GALLERY OF NEW SOUTH WALES