BOOK REVIEWS

Matters of Language

The Scientific Voice. SCOTT L. MONTGOMERY. Guilford, New York, 1995. xvi, 459 pp., illus. $44.50; paper, $19.95. Conduct of Science.

Maurice Druon, the octogenarian novelist who bears the august title of Perpetual Secretary of the French Academy, once said that the best modern French is to be found in medical journals. It's hard to imagine anyone making a similar claim about the English found in the reports and articles in a typical issue of *Science* or the *New England Journal* (for that matter, you have to wonder when exactly Druon last dipped into the pages of *Le Quotidien du Médecin*). I don't mean to suggest that medical researchers or scientists in general write especially badly in the aggregate (aggregates being what they are), but rather that it can be hard to determine what the labels "good" or "bad" are even supposed to mean when they're applied to a form so relentlessly functional as the modern scientific article. It's like asking how well somebody drives to work in the morning.

Indeed, as Scott Montgomery points out in this thoughtful collection of essays, the very constitution of the modern scientific voice militates against any serious efforts at writing well: "Any point at which there emerges something resembling a truly personal or literary style in a technical article is commonly considered to be a point of failure, when required standards are transgressed and 'scientific' discourse begins to break down. Among the scientific community, the personal excites a degree of suspicion, even discomfort or disdain."

The depersonalization of scientific discourse makes itself known in just about every feature of the scientific article: in the sedulous descriptiveness of the title, in the notorious predilection for passives and impersonal constructions, in the bleached locutions that scientists deploy when they want to take exception to one another's work. As Montgomery notes, echoing Peter Medawar and others, the research article functions to conceal the true nature of scientific labor, with its rivalries and triumphs, its frustrations and unexpected pleasures. A reader who didn't know any better could be forgiven for concluding that scientific research is an unrelieved bore.

Must it be so? In the past, certainly, science has spoken with other, more engaging voices, as Montgomery reminds us in one of the most useful essays in this book. When you read the rich and highly personal styles of writers like Lyell or Davy or Darwin—and writers they certainly were—you can't help wondering why the inexorable march of progress demanded that the "I" be reduced to a sandy ash, as Montgomery puts it. Would they have been better scientists for writing the way we do?

But scientists don't often read their distant predecessors, and when they do it is only out of antiquarian interest. As William Whewell—he who gave us the word *scientist*—observed 150 years ago, it's in the nature of science to absorb the discoveries of earlier generations into the language itself, rather than preserving them as texts. (The picture is implicit in the famous epigram that we see as far as we do by standing on the shoulders of giants, with its unspoken premise that we never need to look down.) And with those earlier voices out of earshot, there is a strong tendency to naturalize the dreary instrumentality of modern scientific prose, as if it followed from the nature of the enterprise itself—as if somehow you would compromise the objectivity of your work on photopolymerization or Late Permian mass extinction if you tried to couch your results in the active voice.

But as Montgomery notes, what divides us linguistically from our predecessors is not simply a style but an ideology: modern scientists have "a distrust and even fear of language," whose ambiguities and evocations seem to threaten the object of clear and dispassionate expression—an attitude often accompanied, Montgomery observes, by a disquieting anti-intellectualism. (This is the mentality that often emerges, I think, when scientists take after philosophers, sociologists, and others who live by language for their "jargon," "babble," and the like, in the bluff assurance that there is nothing *those* people have to deal with that will not yield to plain-spoken common sense.)

In the end, though, the endemic suspicion of language has its most serious consequences when it obscures just how highly rhetoricized and language-dependent the discourse of modern science actually is. In one essay, for example, Montgomery traces the metaphors used in biomedical discourse—first the military images implicit in talk of "killer cells," "ion mobilization," "target cells," and the like, popularized by scientists like Pasteur and Koch in the late 19th century, and then the more recent informational metaphors of "codes," "transcriptions," and the like. We can talk about a disease, that is, as either an assault or a miscommunication, and the difference has obvious implications for the way we think about its treatment.

The other essays in the book develop these themes in terms of an impressively broad range of topics: the history of naming of lunar features, the history and political significance of scientific translation in Japan, the literary style of Sigmund Freud. To be sure, no one can cast his net so widely without letting some fish get away. At one point, for example, Montgomery says that there are "barely a handful of studies" that deal with technical translation, when in fact there is sizable literature on the problem, as you might expect given the amounts of money that have been poured into efforts to automate the process. (The difficulty of producing machine translations of technical texts, by the way, is a good indication of just how ambiguous and language-dependent even the most straightforward scientific writing turns out to be).

It is a sign of how polarized the intellectual climate has become that any writer who suggests that scientific understanding depends on language runs the risk of being accused of holding that scientific facts and laws are mere social constructions. For the record, then, let it be said that Montgomery, himself a geologist, dismisses this view as "drawing room silliness." Montgomery's lesson here is something else again: if language doesn't make the world, it may nonetheless shape the ways we apprehend it. Or, as Auden put it, "One notices, if one will trust one's eyes,/The shadow cast by language upon truth."

Geoffrey Nunberg
Xerox Palo Alto Research Center, Palo Alto, CA 94304, USA

Biochemistry Extended

Blondes in Venetian Paintings, the Nine-Banded Armadillo, and Other Essays in Biochemistry. KONRAD BLOCH. Yale University Press, New Haven, CT, 1995. xiv, 261 pp., illus. $30 or £17.95.

"Wisdom has to be wrested from the Sage for the benefit of posterity" says Bertold Brecht in his poem on the origin of Lao