

[Down]

My dear M<sup>r</sup> Innes

I am extremely sorry to hear of your toothache.— You must not put, I think more than *one* drop of Chloroform on the tooth.—<sup>3</sup> I send Tincture of Arnica<sup>4</sup> which smarts the skin (*deadly Poison*) to put *outside*.— M<sup>rs</sup> Darwin finds hot fomentations do best.— Many find cold water applications best.—

I have found two or three drops of Alum & Sw<sup>t</sup> Spirits of Nitre<sup>5</sup> (in bottle with a label) *sometimes* do my teeth *great* good. I was not in when your note came

Yours | C. Darwin

I send my bottles which you can return afterwards

I send *Creosote*,<sup>6</sup> some find a drop of this do much good

Kill or cure — Darwin's sympathetic note to John Innes, Vicar of Down in Kent where the Darwin family lived from 1842, written in January 1848. (Reproduced from *The Correspondence of Charles Darwin*, Vol. 4; footnotes not included.)

called roads of Glen Roy. These are parallel lines on the hillsides of Glen Roy, near Ben Nevis, Scotland, marking successive levels of a former lake dammed up by a glacier.

But his principal activity was his work on barnacles, which, however, was moving into a more humdrum phase. His great discoveries were already made, and it was now a matter of completing his species descriptions, settling his taxonomic ranks and (most wearisome of all) determining his specific and generic nomenclature. This led to an interesting exchange of letters with Hugh Strickland over the principle of priority in nomenclature. Darwin thought it would favour bad and hasty work. He was in fact right. But Strickland had the better grasp of the art of making rules.

Michael Ghiselin, I believe, was the first to point out the importance of Darwin's work on barnacles, in his *Triumph of the Darwinian Method* (University of California Press, 1969). Up until then it had usually been ignored as something of an aberration, largely (I suspect) because historians and philosophers were incapable of understanding it. The reader is ably assisted in the present volume by a 22-page essay, *Darwin's Study of the Cirripedia* (it is Appendix II), which oddly does not refer to Ghiselin and has no author's name. Both the essay and the correspondence support Ghiselin's thesis of the importance of the work in confirming and testing Darwin's ideas on evolution. In particular, the extraordinary intermediates between the hermaphrodite condition and that with separate sexes served to strengthen previous ideas of his on the corresponding evolutionary modification of hermaphrodite flowers.

One wishes desperately for similar aids to understanding the controversies over the roads of Glen Roy, erratic blocks and volcanic craters. Darwin's correspondence with Lyell and Milne over Glen Roy is necessarily highly allusive to what they knew or had published, and correspondingly highly cryptic to a modern reader

who has not been over the actual ground in the company of a Quaternary geologist. Clearly, it is impossible for the editors to explain all these topics as well as the barnacles — one can only be grateful that the essay on them was included. The volumes of correspondence are the essential basis for starting on such explanations, which must be a collective effort independent of this series.

Moreover, the volumes of correspondence will be invaluable for assembling a series of real-life case-histories of what can go wrong in research. Failures of

classification (Darwin ignored some of the roads because he thought they were only sheep tracks), correct argument but from too narrow premises (as over dykes and eruptions), facts inadequately ascertained (the actual heights of the roads), or just plain wrong (Goodsir's description of a parasite as the male of the barnacle), inadequate observation for lack of a directing hypothesis (some of Hooker's geological observations in the Himalayas) — almost every practical and theoretical mistake that can occur in research could be illustrated authentically from these topics. A *catalogue raisonnée* of them would form an admirable manual of admonition for young research workers.

This volume, like its companions, is well produced and edited, and includes massive supporting notes, a concordance of the letters, lists of manuscript annotations, and family trees. Appendix I is a chronology from Darwin's original notebook, recently discovered; Appendix III gives his original observations on his children; and Appendix IV is his original notes of works to be read and works read, now published complete and with its own bibliography (which it needs). An excellent piece of work. □

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## Range finder

Henry Gee

**Dinosaur Plots & Other Intrigues in Natural History.** By Leonard Krishtalka. *Morrow, New York: 1989. Pp.316. \$17.95.*

THE West, apparently, "is where men are men and the plumbing is outside". It is also full of field palaeontologists like Leonard Krishtalka, who, when not actually digging things up in Wyoming (where the bar in the Big Horn Hotel in Arminto "seats four and leans five"), writes for the "Missing Links" column in the Carnegie Institute's bimonthly *Carnegie Magazine*. Twenty-five of his more off-beat contributions have mosied their way into this book, but Krishtalka's editors have made them wipe their boots first.

This is an irreverent collection of essays, far from the scholarly minutiae of Stephen Jay Gould's "Natural History" column or Carl Sagan's cosmic epics. Isaac Asimov could have written them if he'd been raised in a tin shack in Idaho rather than a sweetshop in Brooklyn — popular science, yet spiced with the kind of sleeves-rolled-up aphorisms one might expect in the writings of a bone-hunting man.

We learn, for example, that the only

spirits worth investigating come in bottles marked 'single malt', and that all the cows in a given field tend to face in the same direction. This last is true at least for the fields along Interstate 80 between Pennsylvania and Wyoming. These states are the twin poles around which Krishtalka's life revolves, because he curates bones in the former but unearths them in the latter. Anecdotes drawn from Krishtalka's personal experience riddle the book, and although they add life to an isolated essay, their cumulative effect in a collection such as this may be cloying for some. Nevertheless, the western view of the domestication of the cow is both entertaining and informative, especially the idea for employing the monolithically orientated cattle as billboards along the highway.

The range of topics is eclectic, not to say eccentric, but is not far from what one might find in an Asimov collection. Intelligent life in the Universe, DNA, fossils (lots of them) and broadsides against creationists, spiritualists and other hangers-on all get a look in. But there the similarities end. Krishtalka's informal style is a world away from The Good Doctor's eastern polish, and when sounding off on things he feels strongly about his is the wry and intimate voice of the saloon bar regular rather than the insistent tone of a soapbox orator. Here is a book to save for the next time you're lonesome on the trail. □

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