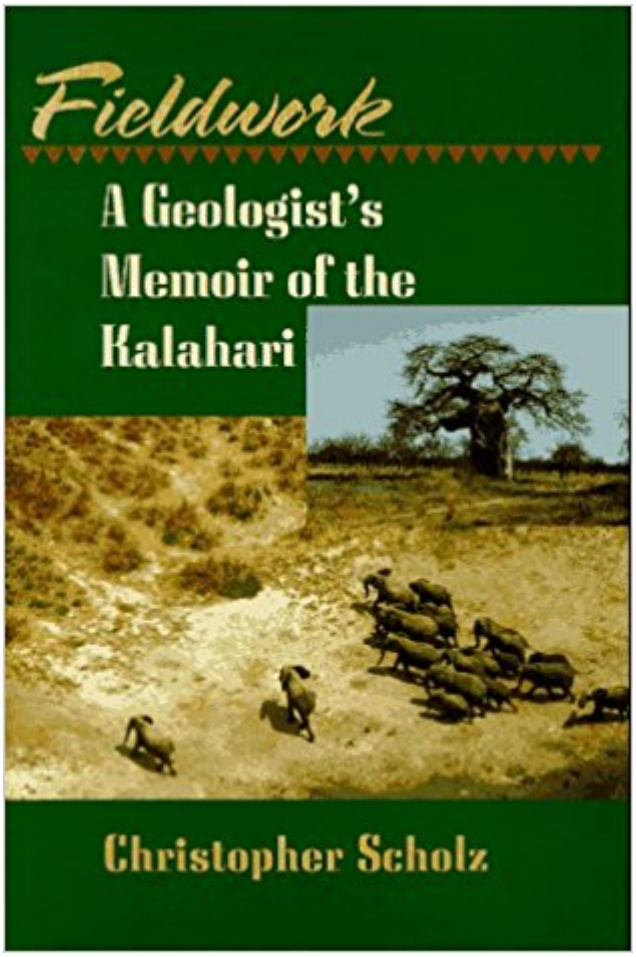
Fieldwork



Synopsis

Christopher Scholz, an internationally recognized expert in the geological fields of seismology and tectonics, here offers a captivating memoir of a three-month-long field expedition to northern Botswana. Fieldwork tracks the adventures of a group of American scientists trying to gather critical data in some of the wildest and most inhospitable parts of Africa. Scholz effectively captures the unique challenges and obstacles faced in this kind of scientific endeavor, including mysterious encounters with a primitive bushman tribe and unavoidable dealings with belligerent local officials and even near-fatal stampedes by rampaging elephants. It is through this absorbing tale that Scholz offers a paean to the long and unique traditions of geological fieldwork, and provides readers with an inside view of the trials and joys of scientific fieldwork. The goal of the Scholz expedition was to determine, by recording tiny natural earthquakes, if a previously unknown arm of the East African Rift system had propagated into the Kalahari Desert from the north. Fieldwork tracks the quest of the scientist for a solution to a specific geological problem from the motivations of the scientist, to the initial formulation of the problem, through to the data collection, and finally, the assembly of the critical evidence. Originally published in 1997. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These paperback editions preserve the original texts of these important books while presenting them in durable paperback editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

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Customer Reviews

In 1974, tectonic theoretician Christopher Scholz was at the beginning of what has become a distinguished career. Seeking field experience after graduate school, he signed on with the United Nations to conduct a seismological study of Botswana's Okavango Delta, where, he surmised, might lie a hitherto unknown branch of the great East African Rift. His account of how geological fieldwork is done presupposes that the reader have some knowledge of earth science, but it is also accessible to general readers. Of interest to all are Scholz's misadventures among 3.8-billion-year-old rocks, the oldest known on the planet, "remnants of a time when the Earth was a hot, roiling mass, just beginning to sort its primordial matter into crust, mantle, and core."

Scholz (geological sciences, Columbia Univ.) provides an insider's view of geological field work with this account of the preparation and execution of a three-month expedition to Botswana in 1974. His first-person narrative is interesting and easy to read, but it is sometimes marred by a lack of focus and occasionally comes across as rather arrogant and judgmental. The scientific question behind the expedition is discussed but is often overshadowed by descriptions of personal circumstances and personalities. Although Michael Novacek's Dinosaurs of the Flaming Cliffs (LJ 9/1/96) provides a more balanced, first-person look at fieldwork in a remote region, this book does provide interesting insight into the nature of the Kalahari. For larger science collections.?Jeanne Davidson, Oregon State Univ. Lib., CorvallisCopyright 1997 Reed Business Information, Inc.

A must read for anyone going into the bundu and having a slight scientific inclination/interest. I'm not a geologist, but the text was clear and easy to follow. The work on the micro earthquakes and the understanding of the Thamalakane faultline was truly groundbreaking. I just couldn't put it down.

Half of the excitement of embarking on an earth sciences degree is the opportunity to do hands-on science. The vast majority of new students relish the chance to find it all out for themselves-make their own observations and measurements, test their own hypotheses-in the best of all work environments, the field. Even those who lack motivation in the classroom often find new levels of determination when faced with the reality of a particularly gripping outcrop.There is a downside to all this delirium. Budding geologists must learn to put up with harsh conditions during the many field classes that are run in the vacations outside the summer months. In Britain, they receive precious little support from their local education authorities, despite losing valuable opportunities to earn money during holidays and terms with part-time jobs. And they also have to equip themselves for

the field by buying expensive weatherproof clothing and tools. All in all, though, the experience of fieldwork is not just enjoyable and an excellent foundation in scientific experimental design. It is also good for a students future career. "Hardly any universities support the concept of fieldwork nowadays." Even if only a very few go on to become professional geologists, the benefits for students of learning to think on their feet, both literally and metaphorically, and of operating in harsh conditions while developing self-motivation and teamwork, make good highlights on CVs. Certainly, my students fare well in the graduate employment cattle market. The trouble is that, although many explorers seem increasingly to realize the benefits of a strong field experience, the whole exercise is under more and more pressure. I'm sure that this arises largely from a deep misunderstanding of what fieldwork actually involves. And the misunderstanding also extends deep into the scientific community-even within those disciplines that have, like the earth sciences, a strong traditional fieldwork. What triggers this odd perception? In a word, image. Fieldwork is often portrayed as an exercise in random data collection- a chance to potter about on your own, just looking around. The geological community hasn't helped itself much here: modern role models and good, clear presentations of excellence in fieldwork are few and far between. Curiously, other sciences have greatly benefited from fieldwork. Take astronomy, for example. How much of the interest in this science in the latter part of the 20th century was launched with the NASA lunar landing, the most expensive fieldwork ever undertaken? Indeed, the solution to the recent hot potato of life on Mars can only really be addressed through another batch of fieldwork-on the Red Planet itself. Meanwhile, back on planet Earth, a new book by Christopher Scholz offers a number of important insights into earth sciences fieldwork. It is true that Fieldwork: A Geologist's Memoir of the Kalahari hardly touches on scientific issue as important as the physical and biological evolution of the Solar System. It is nevertheless a gripping account of a small research programme directed at understanding how continents rift apart. Scholz's story recounts the activities of an expedition to collect geophysical data in Botswana. His research brief was to get a handle on earthquake hazards in and around the Okavango river delta in the Kalahari. So the book contains two currents: the narrative of the scientific investigative approach running alongside the human story-the personal excitement and frustration of life in the field. Scholz's concurrent adventures make for a thrilling read. Attempted robberies, arrests, drinking sessions and expeditions to find a decent hamburger are intertwined with the conditions a geologists needs to receive good signals with seismometers. Scholz graphically describes the difficulties inherent in carrying out seismological experiments in hostile terrain, the hassles, with local, petty bureaucracies, the difficulties of working together in teams and living alongside heards of elephant and rhino. But this is much more than a Boy's Own

account of African adventures. As with most good science, Scholz's Okavango project arose by chance. The United Nations Development Programme runs a project on the Okavango delta, and its researchers wanted some idea of the earthquake hazard in the area. This delta, sited in the heart of the Kalahari desert, is a delicately balanced environment whose rivers are banked by extremely low ridges. If the ridges were formed by active faults, slip on the faults, manifested as earthquakes, could disrupt drainage in the region. This would cause massive ecological changes. The UNDP approached Scholz and asked him to be its local "earthquake consultant". He, in contrast, was interested in the more general problem of how faults and earthquakes work, particularly in response to rifting in the continents. After a bout of detective work involving global earthquake records and satellite images, Scholz realized that the Okavango area lay on a possible continuation of the rift valleys of eastern Africa. If so, the little faults in the Okavango represented an early stage of rifting, something that is extraordinarily difficult to observe elsewhere on Earth. The problem for Scholz lay in testing his ideas-hence his interest in the project to collect detailed data on small earthquakes by recording them directly in the Okavango area. So Scholz's expedition was a marriage of convenience, satisfying the interests of the UNDP in managing the ecology of the Okavango and, at the same time, allowing him to investigate, as he puts it, "a basic scientific problem". I particularly enjoyed Scholz's description of the important early parts of his scientific expedition, the different motivations for the study and the groundwork needed when designing the experiment. These are the elements that are often missing from popular accounts of scientific expeditions. As a consequence, it is easy to lose sight of the motivations of the scientists themselves once they become embroiled in the challenges of a particularly exotic location. Or the technology gets in the way of the story- an all-too-common occurrence. By avoiding these pitfalls, Fieldwork makes an exciting read for crusty old geologists, students in search of role models and all those wanting insight into the processes of scientific discovery. And it illustrates why fieldwork provides such an excellent training environment. This should have left me feeling optimistic. Here I have a book that I can recommend to my students as a role model for their own studies. Of course, this type of expedition is unlike anything they might do themselves while studying, but there are useful parallels. And I can recommend the book to my friends and family who think that fieldwork is just a question of getting a nice tan in an exotic corner of the world. The problem is that the pressure on scientific fieldwork by the organizations responsible for funding are very great indeed. Hardly any universities support the concept of fieldwork, requiring individual departments or, more commonly, the individual students to fund themselves. It is seen as a old-fashioned, unnecessary part of modern scientific endeavor, a bit of a luxury. It may already be too late to convince the skeptics. Academic fieldwork

is being severely penalized even for postgraduates. Britain's Natural Environment Research Council has recently cut its support for fieldwork radically, even through students going on scientific cruises using the council's ships or working in its laboratories can use these facilities without charge. Ships and laboratory costs are underwritten yet there is no specific fund for fieldwork. So I fear that, notwithstanding the wishes of employers and the excellent general training that fieldwork provides, its days are numbered. Even excellent books like Scholz's may be too late to reverse the tide. Rob Butler teaches and researches at the University of Leads.