

EI: Operation Involvement

Grant-starved scientists meet motivated amateurs in a new and promising approach to field research

BY JONATHAN EBERHART

Maybe it's the name. Educational Expeditions International sounds like one of those esoteric travel agencies that send you off to some Mayan ruins with a tame archaeologist in tow to add a little class. The difference is that at EEI it's the archaeologist's idea, and instead of snapping a few pictures from your portablounge and having another cup of tea, you're likely to spend two or three weeks of steaming, 18-hour, 100-degree days digging holes, clearing brush, unearthing relics and cataloguing samples. And you still pay for the privilege.

Or the subject might be sunken shipwrecks in the Mediterranean. Or ancient astronomical markings in Bolivia. Or the snowy, volcanic wastes of Iceland. Or the whistling jungle dog of India. Yet EEI is not in the tour business. If a Cornell ornithologist takes an EEI team 7,500 feet up into the mountains of northeastern Nepal to listen to birdcalls, for example, he's not doing it for fun. Though few of the participants are professional scientists (if they are scientists at all), they are there first and foremost to help the investigator with his studies of a rare and pristine ecosystem. In a time when field-research grants are too small, too restrictive, too bureaucratized and simply too far between, EEI represents an alternative way to get the work done.

The EEI approach is to play both sides (the scientists and the participants) against the middle (the research). Typically, the

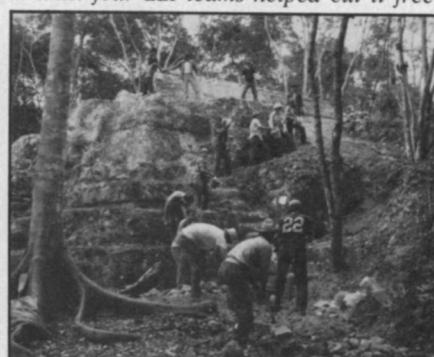


Professionals and amateurs, side by side, study prehistoric bones from caves in Mallorca (above) and set instruments off tiny Carriebow Key near Honduras (below).



Photos: EEI

The relentless jungle had completely submerged a striking Mayan pyramid in Guatemala until four EEI teams helped cut it free.



first step is when a scientist with a field-work project in mind submits the idea to EEI. More precisely it is submitted (or passed on by EEI) to the Center for Field Research, an organization established by EEI in 1972 as a screening group for proposals. The primary requirement for such proposals is that there be a role for additional participants, one which will allow the participants to take an active, rather than mere warm-body, part in the research to be done.

The Center sends the scientist-applicant a form on which to detail the goals of the project, the roles of the additional participants and the scope of the operations involved. Besides the obvious questions (references, dates, etc.), the form is designed to find out just how well the proposal will lend itself to the EEI method. Perhaps the most telling item says: "Please enumerate the various ways in which you plan to utilize amateur participants in achieving your research objectives. *This is one of the most important questions in the plan, so please be specific [emphasis EEI's].* Your team will include educated, highly motivated laymen with great expectations of becoming involved in your work. Assignments of responsibility should be made with a view toward complete integration of amateurs and professionals." Other items deal with a typical work day ("If the team is to be broken into small groups, please indicate what each group will be doing"), the range of topics to be covered in field discussions and the conditions to be expected during the expedition ("Accuracy is important; if it's bleak, say so").

The other area of major concern is the range of skills that would be welcomed from the participants. On past expeditions, these have ranged from "all individuals interested in learning field and laboratory techniques" (an archaeological trip to Mallorca) to the more specific needs of a sea-otter study in California ("A general background in ethology, invertebrate biology or mammalogy would be helpful") to scuba-diving certification and

physical fitness. A study of prehistoric rock carvings in England was recommended to "artists, sculptors, photographers, and keen observers and walkers of all ages." (Participants have ranged in age from 12 to 80, although 16 is now the minimum.)

If the proposal is accepted (the Center now receives 150 to 250 ideas annually,



Fragile footbridge on trek to Nepal.

of which about 100 make the grade), the scientist(s) and the EEI staff meet to work out the logistics. Projects have ranged from as few as 1 additional participant to as many as 55, with project costs from \$400 up to some \$58,000. Once a plan has been detailed, the costs (including transportation, supplies, occasional instrumentation and other items) are calculated and, in general, divided by the number of outside participants. During 1975, for example, the costs to individual participants ranged from \$490 plus transport to Monterey, Calif., for the sea-otter study to \$990 plus transport to Katmandu

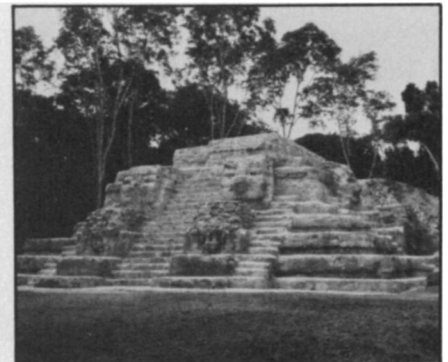
for the Nepal expedition. With the proposals in hand, it then becomes EEI's job to act as matchmaker.

Upcoming expeditions are described in a brochure which indeed resembles a travel folder, except for the fundamental EEI difference. What you are paying for, it points out, is not merely an exciting experience—though it is often that—but a role in research. Potential participants are asked about their interests, skills, experience and goals, after which EEI seeks to combine the appropriate amateurs with the available research activities. Most applicants get their first choices.

Participants have included students, teachers, amateur investigators, ex-scientists, non-academics and a wide range of others. Most of the choosing is done by EEI itself, yet past expedition leaders have been lavish with their praise. "Without exception," says Aubrey Burl of Kingston-upon-Hull College of Education, who has led two EEI teams in excavating Stonehenge-like sites in Britain, "I have found my American colleagues to be intelligent and eager people, a combination that permits them to accomplish sometimes twice as much as would be achieved by the more normal aggregation of senescent ladies from the nearby vicarage, treasure hunters posing as amateur archaeologists and students whose only reason for being on the site is that college regulations demand it."

Few scientists these days, of course, are likely to say anything that would imperil what few sources of funding are available, but the EEI experience seems to draw from its "amateur" participants more than even the field-experienced researcher tends to expect. Bobby Miles Gilbert of the University of Missouri knew nothing of EEI except what was in a brochure sent to the university's anthropology department. Past his deadline for funding from the National Science Foundation, he succeeded in interesting EEI in his studies of prehistoric animal skeletons at the bottom of a huge cave known as Natural Trap in Wyoming. "I was astounded," he says,

Axe-wielders, diggers, artists and landscapers worked together on the project, which is now a Guatemalan national monument.



“at the amount of work we had accomplished in the field with amateurs, and overwhelmed by the sense of rapport, camaraderie, team spirit and dedication shown by the EEI participants. . . . I am continually amazed at how much better workers these amateurs are than the paid professional crews I’ve been associated with in the past ten years. It seems to me that these people set for themselves higher standards of performance than does someone to whom fieldwork is just a job.”

A number of the team leaders report that another advantage lies in the fact that EEI, providing both funding and crew, leaves them free to devote more time to planning a proper expedition. Harvard’s renowned Donald H. Menzel, who has been organizing his own solar eclipse expeditions since 1918, has now done three with EEI’s help, including a huge trek by 60 people to Mauritania, two-thirds of whom were provided by EEI. (A detailed—and extremely well-written—account of this experience appeared in the September 1973 issue of *HARVARD MAGAZINE*, from the viewpoint of Anne Fadiman, who went along as a participant. “We were, to say the least, diverse,” she wrote. “My tentmate, for example was 51 years old, had been an automobile mechanic and a technician in a bacteriology laboratory before she retired. . . . The group also included a mail handler, an Air Force weapons controller, a clinical pathologist, an anesthesiologist, a professor of machine technology at Dartmouth, a teacher at a school for Navajo Indians, a reporter for the *Wall Street Journal*, a research analyst for the Defense Department and a bee-keeper who had invented the world’s largest honey-extracting machine.”) Menzel, who was used to having to scrape his expeditions together from all manner of diverse sources (he once sought and received help from Sears and Roebuck), learned only from experience, he says, that the complex problems of logistics worked out best when he would back off and let EEI do it.

Furthermore, he says, “in these days when science has become unpopular for some inexplicable reason, I think it is even more important that an organization like EEI participate in the preparation of expeditions. Future support of science depends upon public understanding.” Understanding—and involvement. If anyone has been more excited by the expeditions than the scientists, it is the outside participants. “Actually working with professionals in the field, coupled with their full-time guidance and instruction, provided a unique learning experience unmatched in any classroom,” wrote 17-year-old Leslie McCament, who took part in a study of Indian artifacts and animal remains at huge, prehistoric bison “kill” in Nebraska. “And the practical experience of being able to directly apply one’s knowledge gives a feeling of gratification and fulfillment which simply must be experi-

enced to be appreciated. . . . All in all, I feel the expedition was one of the most broadening experiences of my life, and I shudder to think how narrow I may have been today had I not gone.” Some of the participants describe an adventure that was “merely” exciting and educational. For many others, however, it seems to have been very much a consciousness-raising experience. “After graduating from high school in the spring,” wrote another 17-year-old, “I was quite lost. . . . I came home with a new awareness of the world around me, where I now stand in it, and where I must go. It will take time for the full significance to really hit me.”

Ensnconed in a cramped cluster of offices in Belmont, Mass., EEI was founded in 1970 by Robert Citron of the Smithsonian Center for Short-Lived Phenomena. It is now headed by its president, Brian Rosborough, who also emphasizes the roles of administrative officer Jane Fischer and Betsy Caney of the Center for Field Research. It has since sponsored projects for more than 150 scientists, providing more than 1,200 participants and some \$650,000 for expeditions to 12 states and 28 foreign countries. The organization is not the sole support for all of its expeditions, however. Nearly half are funded in part from other sources, and Rosborough says that EEI is trying to increase that number. Nor does all of EEI’s support come from paying participants. A scholarship program, administered for EEI by state government offices of special education, provides whole or partial support for about 40 percent of them.

The range of expeditions being planned for the coming year is diverse—a tacit comment on the many fields to which EEI’s approach is applicable—including studies of aging in Samoan islanders, underwater exploration of a 17th-century warship off the coast of England, a population survey of sea cows from Indonesia to Africa, a solar-eclipse trek to Australia, a study of early human migrations as reflected by divergent species of domestic cats in Greece and Iran and numerous others. And, says Rosborough, EEI is hoping that the range of research proposals will widen further still, encompassing such fields as musicology, folklore, conservation and historic preservation.

It has become clear that the name Educational Expeditions International is not only misleading—it shortchanges the basic notion of research as the *raison d’être*—but possibly counterproductive, if it leads scientists to feel that they would be nothing but scholarly tour guides. Thus EEI, while retaining its (nonprofit) corporate acronym, plans to start presenting its activities under the title of Earthwatch. (The scholarship program is already so identified.)

Whatever the name, in view of the lavish praise from scientists and outside participants alike, it is somewhat surpris-

ing that the organization’s main problem seems to be a lack of visibility. The prestigious consulting firm of Arthur D. Little, Inc., commissioned in 1974 to study the EEI scholarship program, concluded that EEI “provides a unique and valued service to the scientific and educational communities,” with a “positive and even dramatic impact . . . on the scholarship participants.” The report’s primary recommendation was only that EEI “increase the visibility of its expeditions and upgrade the effectiveness with which it markets its expeditions to paying participants.”

To this end, says Rosborough, EEI has been working to develop affiliations with a number of other organizations such as museum associations, scientific groups and the like, which may be able to spread the word among their members. Academic credit is available through Lesley College in Cambridge, Mass., and a similar arrangement is being explored with the independent-study extension service of the University of California. “EEI fulfills a function which has hitherto been unavailable to universities,” says Milton R. Stern, Dean of University Extension at Berkeley. “Field study is certainly a part of university experience.” He offers the example of art history students whose investigations are confined to examinations of photographic slides. “I wouldn’t call it hypocrisy,” he says. “Well . . . maybe I would.” Stern maintains, however, that courses taken for credit are the least important part of university extension services. Far more important, he says, is continuing professional education, where the motivation is knowledge, experience and participation.

And that, says Rosborough, is the fundamental point. “We’re underwriting science,” he says, “but we’re selling involvement.” □

For more information on involvement with EEI, interested scientists should apply to:

Center for Field Research
Dept. CAG
68 Leonard St.
Belmont, Mass. 02178

Potential participants should apply to:

Earthwatch
Box 127
Belmont, Mass. 02178

For scholarship information (the deadline for 1976 applications is Feb. 18), students ages 16 to 21 should write directly to their state department of education, division of special education. A fellowship program for teachers will begin in January, with information available directly from Earthwatch.