

Foot-
notes

Few will find the anniversary memories of John F. Kennedy's assassination harder to bear this week than the people of Dallas.

James W. Pennebaker, a professor of psychology at Southern Methodist University, has studied the city's collective psyche in the wake of the assassination 25 years ago.

He has found, among other things, that in the year after the President's death, the suicide rate in Dallas increased by 10 per cent, compared with a slight decrease nationally. The murder rate in the city rose 27 per cent that year, while nationwide it didn't rise at all.

"Because the events were difficult for most residents to talk about," he says, "people tended to internalize their reactions."

Evidently those reactions have lingered. Another study by Mr. Pennebaker, a survey of a sample of Dallas residents, has found that nearly half of those old enough to remember the events of November 22, 1963, said they could not bring themselves to visit an exhibit on the assassination that is about to open in what was the Texas School Book Depository, from which President Kennedy was evidently shot.

Chocolate doesn't naturally spring to mind as a lively field of scholarly research. It tastes great, makes a nice gift, occasionally lifts morale. But who would have thought it could look good on a résumé?

Herman A. Berliner, dean of the business school at Hofstra University, thought it might.

Mr. Berliner once proposed to colleagues at the university that they hand out to participants at a conference on higher education copies of the Hofstra seal cast in chocolate. For that he took no end of ribbing, and his response was yet another conference, to be held on the Hofstra campus next month—"Chocolate: Food of the Gods." "I happen to like chocolate," Mr. Berliner readily admits. But he has a bigger goal in mind: "I think we can do a top-notch scholarly conference on chocolate, and have fun doing it."

Indeed, if the program is any measure, chocolate has some application in an amazing number of disciplines: psychology ("Chocolate and Loneliness Among the Elderly"), literature ("Inside the Pastilles of the Marquis de Sade"), health and science ("The Bittersweet Truth of Chocolate and Diabetes"), even Romance languages ("Chocolatissimo!").

Realizing the irregular nature of their topic, organizers were prepared to call off the conference if the papers they received were not up to par. In fact, Mr. Berliner says, they were "swamped" with good proposals and could schedule only about half of those that qualified.

"A lot of places have 'chocoholic' weekends," he says, "but that's precisely what we didn't want."

Scholarship



New Geological Discoveries Intensify the Debate Over What Caused Demise of the Dinosaurs

Was it a giant asteroid or an unusual amount of volcanic activity?

By KIM A. McDONALD

Ever since four University of California researchers suggested in 1980 that the dinosaurs' demise 65 million years ago was the result of a giant asteroid's hitting the earth, a plethora of new geological discoveries have persuaded many scientists that that seemingly incredible hypothesis could, in fact, be on the right track.

Most scientists now agree that the new evidence—ranging from pieces of "shocked quartz" altered by ancient explosions to soot from widespread fires—indicates that one or more major impacts devastated portions of the earth 65 million years ago.

"The evidence for an impact or impacts at that time is overwhelming," said David M. Raup, a professor of geophysical sciences at the University of Chicago.

But whether such impacts can account for the extinction of many forms of life during that crucial period in the earth's history—known to geologists as the Cretaceous-Tertiary, or K-T, boundary—remains a matter of contentious debate.

The most serious opposition comes from scientists who believe that the paleontological record can be best explained by an unusually large amount of volcanic activity on the Indian subcontinent at the end of the Cretaceous period.

According to that scenario, the large volume of carbon dioxide released by the ancient volcanic upheaval, known as the Deccan Traps, created a global "greenhouse effect" that produced temperature increases and alterations in the earth's protective atmosphere. Over a period of hundreds of thousands of years, those changes eventually led to the widespread extinction of many species.

"Paleontologists who know enough about the record know there was no sudden loss of life," said Dewey M. McLean, a professor of geological sciences at the Virginia Polytechnic Institute and State University and a leading proponent of the



DINOSAUR (TOP), AMERICAN MUSEUM OF NATURAL HISTORY. PHOTOGRAPH FOR THE CHRONICLE BY GENE DALTON
Virginia Tech's Dewey M. McLean: "Paleontologists who know enough about the record know there was no sudden loss of life."

volcanic-activity idea. "The impact calls for instantaneous extinction, and the paleontological record does not support it."

In the impact hypothesis, an asteroid or a series of giant meteorites hitting the earth triggered fires and threw enough debris

into the atmosphere to obscure sunlight, creating a worldwide "nuclear winter." The rapid cooling of the earth and widespread destruction of plant life, according to that scenario, resulted in major climatic and ecological changes that led to the mass extinction of dinosaurs and other species.

Although several scientists had previously suggested a relationship between such collisions and mass extinctions, the new hypothesis was based on the discovery of a large amount of iridium—an element rare on earth, but common to meteorites—found at the K-T boundary at several locations on the earth.

Testing the Alvarez Hypothesis

Its credibility was further enhanced—unfairly so, say some scientists—by the fact that Luis W. Alvarez, a Nobel Prize-winning physicist at the University of California's Lawrence Berkeley Laboratory who died in September, headed the group that reported the iridium discovery and formulated the idea. The other three scientists in the group were Walter Alvarez, Luis's son and a professor of geology at the university's Berkeley campus, and Frank Asaro and Helen V. Michel, nuclear chemists at the Berkeley laboratory.

"All of us give Luis Alvarez a great deal of credit for stimulating this," said Charles

With Whimsical Proposals and Serious Discussions, Philosophers Seek Ways to Reach a Wider Audience

By ANGUS PAUL

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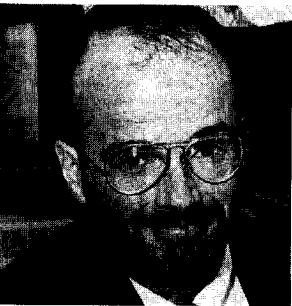
A game show called "What's the Truth?" with philosophers as contestants? Or a program during which perplexed viewers dial their phones and "Ask Dr. Sooth"?

Such whimsical suggestions for using television to communicate philosophical concepts lightened the predominantly serious tone of a conference held at Vanderbilt University under the auspices of the Society of Philosophers in America—SOPHIA.

The conference was the second of three organizational meetings to be held by the society, a new group that has grown out of many philosophers' dissatisfaction with the field at large.

The 34 participants shared ideas on the

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JOHN C. MORTKO
John A. Loughney: The Society of Philosophers in America "is not going to be some sort of an elite organization."

New Discoveries Intensify Debate Over the Death of the Dinosaurs

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the detail of the k-t boundary and the whole sequence of extinction," said Mr. Officer, who, with Charles L. Drake, another Dartmouth researcher, is a leading proponent of the view that volcanoes were the principal cause of the extinctions.

Much of the new evidence was reviewed last month at a conference, "Global Catastrophes in Earth History," in Snowbird, Utah. According to participants, the principal findings that support the Alvarez hypothesis include:

- The discovery in k-t boundary sediments of pieces of "shocked quartz," similar to that found at the sites of nuclear explosions, in Europe, the United States, and the Soviet Union. The stress lines in the quartz, say some scientists, indicate that they were subjected to terrestrial collisions more powerful than the explosion of the most violent volcanoes.

- The discovery of what appears to be ancient soot in k-t boundary clays from Denmark, New Zealand, and Spain, suggesting that enormous wildfires may have enveloped the earth for a year, about 65 million years ago.

- The presence of glassy spherules in similar worldwide sediments that are left by meteoritic impacts, as well as by some kinds of volcanic eruption.

In addition, researchers from the University of Washington last July reported finding geologic evidence of an ancient tsunami, or tidal wave, near Texas that could have been produced 66 million years ago by a giant asteroid.

Stanley V. Margolis, a geochemist at the University of California at Davis, reported at the conference that he had identified grains in k-t boundary sediments from Spain whose chemical composition and structure indicate an extraterrestrial origin.

Despite this large body of evidence, opponents of the Alvarez hypothesis see serious inconsistencies in the argument that the impacts produced a dramatic change in the earth's climate.

In addition to the failure of the hypothesis to account for the gradual extinction of species in the paleontological record, Mr. McLean said, it cannot explain why chemists studying the change of oxygen isotopes in rock have found that the earth was undergoing a warming trend. That finding is more consistent with an increase in volcanic activity, he added, than the global cooling of a nuclear winter.

Microscopic Marine Organisms

Mr. McLean said the k-t boundary sediments show that the greatest number of extinctions occurred among microscopic marine organisms, such as coccolithophorids, that are known to be severely affected by changes in the carbon-dioxide content of the atmosphere.

Other microscopic marine organisms, such as dinoflagellates, whose numbers should have been seriously curtailed by the blockage of sunlight caused by an asteroid's colliding with the earth, he added, "made it right through the k-t boundary with hardly a blip."

Supporters of the volcanic mechanism of extinction also argue that the glassy spherules, shocked quartz, and large increases in iridium in the k-t boundary sediments—evidence

used to support the impact hypothesis—are actually the remains from the large volcanic activity of that period, a view that is sharply contested by the Alvarez group.

"I have never been convinced that the record indicates any wipe-out of life by an impact," said Mr. McLean. "What we have at the time is the greatest volcanic event in at least the last 200 million years. I see no compelling reason to assume a big impact 65 million years ago. I think most of the record can be explained by natural processes."

Claims Fervently Disputed

Proponents of the Alvarez hypothesis, to the consternation of many paleontologists, have taken issue with the accuracy of many of the paleontological finds, arguing that some of the ancient sediments showing that dinosaurs did not die abruptly have been disrupted.

They also fervently dispute the claims that the shocked quartz or iridium anomalies were produced by volcanoes.

"No volcanic eruptions could have produced multiple sets of parallel lines that intersect within the shocked quartz," said Mr. Asaro.

Furthermore, the ratio of platinum that is mixed with the iridium in the k-t boundary, he added, agrees much more closely with those found in meteorites than with those in the magma of volcanoes.

Yet, if an impact big enough to change the earth's climate did occur, Mr. McLean and other opponents have repeatedly asked, why have geologists not found a gigantic, 65-million-year-old crater?

Walter Alvarez of Berkeley said the fact that all but 20 per cent of the earth's surface had been changed over the past 65 million years gave scientists only "one chance in five of finding" a crater.

"It would be very nice to find a crater," he added, "but its absence is not a very strong argument against an impact."

Despite the disparity between the two theories, a number of recent findings suggest that impacts and volcanism have both contributed to the mass extinctions.

For example, studies of strontium in the k-t boundary sediments by researchers at the Massachusetts Institute of Technology and the Scripps Institution of Oceanography suggest that acid rain with the concentration of battery acid fell from the atmosphere 65 million years ago, a finding that both groups have used to advance their views.

In the first scenario, scientists believe, the energy released in a violent impact could have converted some of the nitrogen in the atmosphere into nitric acid. In the other, the excess carbon dioxide and sulfur dioxide from volcanoes would have increased the acidity of the atmospheric vapor.

Some researchers have also suggested that the period of heavy volcanic activity that preceded the demise of the dinosaurs could have been triggered by one or more impacts.

"It may turn out that everybody is right," said Mr. Raup of Chicago.

Many leading scientists on both sides, however, doubt that such a connection exists.

Mr. McLean said the first signs of the doming of the earth's crust from the Deccan Traps had occurred 80 million years before the k-t boundary.

ary, while Mr. Asaro called the scientific evidence of an association between an impact and volcanism "meager."

Even so, the evidence strongly suggests that, whatever the event, it occurred 65 million years ago, leaving scientists with something of a conundrum.

"Even if we found a dinosaur impaled by a meteorite," said Mr. Raup of Chicago, "it would only prove that dinosaur was killed by that impact."

A resolution of the current debate, if one is found, say researchers, will have to come from the gradual accumulation of geologic data on one side or the other.

"I'm not persuaded that you ever prove anything in science," said Mr. Alvarez. "You increase the level of confidence. I don't expect to prove 100 per cent that an impact killed the dinosaurs."

Added Mr. Officer of Dartmouth: "The resolution will come from hard geological data—what's in the record."

But with so many conflicting data and professional reputations at stake, the growing frustration in the debate has contributed to rancor within the discipline, as scientists from both sides have sought to undermine their opponents.

According to some scientists, proponents of the Alvarez hypothesis have laughed at and derided their opponents at meetings, questioning the credibility of their work. Their opponents have shot back with charges of their own, the most persistent of which has been to underline the ignorance of their detractors about paleontology.

"The bitterness, the public insults, the acrimony—they still go on," said Mr. McLean. "Some careers have been made by the k-t. Some people who took a stand have to defend it. To see a scientist turn out eight years of his work is sort of a violent event. Some of the impactors are locked into their positions. You begin to see how the politics works."

'Terrible Bitterness Exists'

Mr. Raup said the fierce arguments reminded him of those that were waged over the theory of continental drift.

"The terrible bitterness certainly exists," he said. "All of us in the earth sciences went through the same thing in continental drift and plate tectonics in the 1960's, with very much the same effect."

He said he believed that much of the strife over the Alvarez hypothesis resulted from the fact that it directly opposes a fundamental paradigm in geology—that most of the earth's changes occurred gradually, rather than through catastrophes.

While astronomers and other physical scientists were quick to embrace the Alvarez view, he added, "biologists and paleontologists rejected it instinctively."

Despite the rancor and the bitterness among participants, Mr. Raup said, the debate over what led to the demise of the dinosaurs continues to generate an incredible amount of new information on the Cretaceous-Tertiary period.

"The data are coming in in large quantities," he said. "The work is of very high quality and the detail of geology and paleontology is just wonderful. It's been surprising to see such a high level of activity for something that's been around for eight years."

"No matter how this turns out," he added, "we're going to learn a lot more about the earth and about extinction."

Philosophers' Group Seeks Ways to Reach a Broader Audience

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writing and teaching of philosophy and on ways to disseminate the discipline's insights to a broad audience.

Discussions proceeded according to a plan that was unusually informal for an academic meeting. The participants, instead of reading papers to one another, broke into small groups to comment on philosophers' responsibilities to their students, their colleagues, and society at large.

That format was chosen to reflect one of SOPHIA's central goals—promoting greater interaction among philosophers interested in various schools of thought worldwide.

The society's members trace its origins to the 1970's, when two developments came to a head.

One was the growing dissatisfaction of "pluralists"—scholars who advocate openness to many kinds of philosophy—with Anglo-American analytic philosophy. The analytic approach, in the tradition of Bertrand Russell and Ludwig Wittgenstein, tends to stress logic and the analysis of language.

The pluralists argued that representatives of the analytic school had excessively narrowed their focus and, as the result of garnering power in the American Philosophical Association and in individual philosophy departments, had impeded the careers of non-analytic philosophers.

A related development that gained momentum in the 1970's was resentment toward the philosophy departments at a few large universities that philosophers elsewhere viewed as dominating the field.

David A. Hoekema, associate pro-

fessor of philosophy at the University of Delaware and executive director of the A.P.A., said in a telephone interview that, indeed, proponents of Anglo-American analytic approaches had generally held sway back then and "tended to dismiss dissenters."

"Pluralists used tactics that angered some people at the time," he said, "but I think the net result has been salutary for the discipline and the association."

Committee Established

In the late 1970's, a group led by Nicholas Capaldi of Queens College of the City University of New York, John Lachs of Vanderbilt, Charles M. Sherover of Hunter College of C.U.N.Y., John E. Smith of Yale University, and Bruce W. Wilshire of Rutgers University established within the A.P.A. the Committee for Pluralism in Philosophy.

The committee, designed to effect reform of the association, led to SOPHIA, which "exists to promote the general interests of philosophers in this country and to advance their research projects," said John A. Loughney, SOPHIA's executive director and a professor of philosophy at Westfield State College.

The society comprises about 60 scholars—including a number with roots in analytic philosophy—and probably will grow to about 100 next year. Mr. Loughney's preference is to keep bringing in new people, although at a gradual pace. "It's not going to be some sort of an elite organization," he said.

He and other leaders of SOPHIA emphasized, first, that they did not

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think of the society as an alternative to the A.P.A., which, they said, has in many ways served philosophers well. Second, they said, SOPHIA is only one of many "satellite" societies of the association that have promoted pluralism; others include the Metaphysical Society of America.

Some pluralist goals remain unrealized, Mr. Loughney said. But by and large, he said, pluralism is now better represented in leadership positions of the association, and the acrimony between pluralists and analytic philosophers has diminished.

Mr. Hockema of the A.P.A. agreed. Political pressure applied by the pluralists has been one reason for the change, he said, but another has been the fact that philosophers in the analytic tradition have recognized the limitations of that tradition and have sought to broaden their views.

What's more, he said, "there's a recognition that philosophy is sufficiently beleaguered in academe that we'd better band together and preserve its place."

Details of SOPHIA's course for the years ahead will begin to emerge only after the society has held—at Emory University—the third of its first three meetings. Its initial meeting occurred last year at Harvard University.

The Vanderbilt conference gave some indications, however, of things that SOPHIA may help encourage.

More Speculative Research

Mr. Loughney said he expected that, in the realm of research, more scholars would work within American pragmatism, Continental existentialism, Latin American thought, and other non-analytic traditions.

As pluralism becomes more widely accepted by the academic establishment, Mr. Loughney added, philosophers may also do somewhat less commentary on canonical writings, in favor of speculating on answers to questions in such areas as the meaning of human existence and the problematic relation of the individual to society. Speculative philosophy has often been frowned on at U.S. colleges and universities, he said, in part because it "demands re-examinations of accepted positions. It's inherently subversive."

An increase in the exchange of ideas among philosophers could, said Yale's Mr. Smith, the chairman of SOPHIA, produce more jointly written scholarly works. Moreover, he argued, meetings such as the one at Vanderbilt could lead to livelier collections of articles. Essays, rather than being prepared beforehand in relative isolation, could emerge after a conference and grow out of uninhibited debates with colleagues.

Susan Bordo, associate professor of philosophy at Le Moyne College, said she hoped that feminist and minority-group perspectives would be brought increasingly to bear on works by Aristotle and others. The huge majority of philosophy's canonical works were written by white males, whose insights, while often valid, are partial, said Ms. Bordo.

"We must confront the biases in classical philosophy," she said, "or we become dinosaurs."

Use of New Technology

For such scholarship to occur, participants at the meeting argued, the scholars who would do it must be supported. To that end, the participants said, SOPHIA ought to find ways to "humanize" tenure-granting procedures, for instance, and to meet the needs of researchers not affiliated with a college or university.

Much talk centered on expanding philosophers' use of new technology

to communicate with both students and society in general.

Several participants mentioned using "Donahue" and "Oprah Winfrey" in ethics, logic, and other courses and argued that there was little danger of television's supplanting classic texts. While "Donahue" and "Oprah" may serve, among other things, to highlight fallacious informal-reasoning processes, said Ms. Bordo, they "are not much good for providing models of beautifully reasoned arguments."

Mr. Lachs of Vanderbilt, a SOPHIA trustee, is the editor of scripts for audio cassettes that will be produced by Knowledge Products, a Nashville company. Two cassettes, intended primarily for use by commuters driving to work, will be devoted to each of 13 great philosophers.

Several scholars at the SOPHIA meeting regretted that philosophers

had generally neglected audiences beyond academe.

A forthcoming conference at Cambridge University, "Philosophy and the Human Future," will feature a dialogue between a Soviet philosopher and the sociologist Robert N. Bellah, one of the authors of *Habits of the Heart: Individualism and Commitment in American Life*.

Mr. Bellah of the University of California at Berkeley, although not a philosopher, "has engaged the reading public on issues of individualism and collectivism more effectively than any of us has," said James A. Ogilvy, an independent scholar who lives in Berkeley and is organizing the Cambridge conference.

Most of the participants in the SOPHIA meeting urged that more philosophers follow the lead of thinkers from Plato to William Bennett and—

to enrich their scholarship as much as to benefit society—join public debates on political and social issues.

"Economists have been able to get themselves on a Council of Economic Advisers," Mr. Lachs said. "Where is the Council on Virtue and Probity?"

Some cautionary notes were sounded, however.

Joseph J. Kockelmans, a SOPHIA trustee and professor of philosophy at Pennsylvania State University, said that not all philosophers need play a direct, immediate role in society. Good teachers, he said, may count on having an indirect influence through their students.

A professor of philosophy at Vanderbilt, Charles E. Scott, said he was not sure that philosophers have "special insights" into social issues. Contributions to public debates, he argued, should not be permitted to

substitute for demonstrations of philosophical expertise in a specialized area. Granting tenure to generalists at research universities who had not produced rigorous scholarship could result in a softening of the discipline, he said. "I don't think the standards of American philosophy are very high. I'd favor toughening standards."

Mr. Scott also stressed the importance of maintaining the distinction between philosophers as citizens and members of political parties and as scholars.

"To do what we do best is to be incommunicado with the largest part of the voting population in the United States," he said. "That's because we're doing our job. Now, if we want to convert that into a popular arena, I think that's fine, I think it should be done, but I don't think it's a philosophical action."

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