AASP NEWSLETTER

D. J. NICHOLS, EDITOR ISSN 0192-7299

VOLUME 13, NUMBER 3 JULY 1980

CALL FOR PAPERS: 1980 ANNUAL MEETING

AASP MEMBERS ARE INVITED TO CONTRIBUTE PAPERS FOR THE TECHNICAL PROGRAM OF THE ANNUAL MEETING TO BE HELD IN KEYSTONE, COLORADO, 14-18 OCTOBER. THE TECHNICAL SESSIONS WILL CONVENE WEDNESDAY THROUGH FRIDAY, 15-17 OCTOBER.

PAPERS ON ALL ASPECTS OF PALYNOLOGY WILL BE CONSIDERED FOR INCLUSION IN THE PROGRAM. THE THEME OF THE MEETING WILL BE "BACK TO BASICS IN BIOSTRATIGRAPHY" AND MEMBERS ARE URGED TO CONSIDER CONTRIBUTING PAPERS IN KEEPING WITH THIS THEME. TWO OTHER SPECIAL SESSIONS ARE PLANNED: PALYNOLOGY OF THE THRUST BELT OF THE ROCKIES AND OTHER STRUCTURALLY COMPLEX TERRAINS, AND RECENT ADVANCES IN THE STUDY OF FOSSIL DINOFLAGELLATES. PAPERS PERTAINING TO THESE TOPICS WILL BE GIVEN SPECIAL CONSIDERATION. PAPERS ON OTHER ASPECTS OF PALYNOLOGICAL RESEARCH WILL BE GROUPED INTO SESSIONS AS APPROPRIATE.

SPEAKERS WILL HAVE 20 MINUTES FOR THEIR PRESENTATIONS; A 15 MINUTE TALK WITH 5 MINUTES LEFT FOR DISCUSSION IS RECOMMENDED. THE TIME LIMIT WILL BE STRICTLY ADHERED TO. MEMBERS MAY PRESENT THEIR DATA AS PART OF A POSTER SESSION. SPACE WILL BE PROVIDED FOR POSTER DISPLAYS, AND IF SUFFICIENT INTEREST IS SHOWN IN THIS FORM OF PRESENTATION, THE POSTER SESSION WILL BE FORMALLY SCHEDULED.

CONTRIBUTORS MUST SUBMIT ABSTRACTS OF THEIR PAPERS—FOR BOTH ORAL PRESENTATIONS AND POSTER SESSIONS. THE ABSTRACTS WILL BE PRINTED FOR DISTRIBUTION. IT IS NOT NECESSARY TO SUBMIT TITLES PRIOR TO THE DEADLINE FOR ABSTRACTS.

DEADLINE FOR ABSTRACTS IS 31 AUGUST 1980

THIS DEADLINE HAS BEEN ESTABLISHED BECAUSE TIME IS REQUIRED FOR ORGANIZATION OF THE PROGRAM AND PRINTING OF ABSTRACTS. YOU MAY SUBMIT ABSTRACTS EARLIER, IF YOU WISH.

PAPERS BY STUDENTS WILL BE JUDGED AND CONSIDERED FOR THE OUTSTANDING STUDENT PAPER AWARD. THIS AWARD CONSISTS OF A FRAMED SCROLL AND TWO YEARS FREE MEMBERSHIP IN AASP. WHEN SUBMITTING THEIR ABSTRACTS, STUDENTS SHOULD IDENTIFY THEMSELVES SO THAT THEY CAN BE PROVIDED WITH GUIDELINES FOR PRESENTATION. FOR PURPOSES OF THIS AWARD, A STUDENT IS CONSIDERED ANYONE CURRENTLY ENROLLED IN A DEGREE PROGRAM OR ANYONE WHO GRADUATED WITHIN THE CALENDAR YEAR. PAPERS COAUTHORED BY STUDENTS AND NON-STUDENTS WILL BE JUDGED IF THEY ARE PRESENTED BY THE STUDENT.

ABSTRACTS SHOULD BE ACCOMPANIED BY THE AUTHOR'S NAME(S) AND AFFILIATION. PLEASE INDICATE WHETHER YOU DESIRE SPACE FOR A POSTER DISPLAY IN ADDITION TO OR INSTEAD OF A PLACE IN THE SCHEDULE FOR ORAL PRESENTATIONS. IN THE CASE OF COAUTHORS, INDICATE WHO WILL BE PRESENTING THE PAPER. UPON ACCEPTANCE OF THE ABSTRACT THE AUTHOR OR DESIGNATED SPEAKER WILL BE PROVIDED WITH INSTRUCTIONS TO SPEAKERS THAT DETAIL INFORMATION ON FACILITIES AT KEYSTONE LODGE. TWO PROJECTORS FOR 35 MM SLIDES AND TWO SCREENS WILL BE AVAILABLE.

SEND YOUR ABSTRACT AS SOON AS CONVENIENT—BUT BEFORE THE DEADLINE—TO: D. J. NICHOLS, U.S. GEOLOGICAL SURVEY, MAIL STOP 919, BOX 25046, DENVER, CO 80225.

AASP MEMBERS ARE URGED TO PARTICIPATE IN THE TECHNICAL PROGRAM, AND TO HELP MAKE THE KEYSTONE MEETING A SUCCESS.

THIS NOTICE IS THE FIRST AND LAST CALL FOR PAPERS. REMEMBER THAT DEADLINE: 31 AUGUST 1980!

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1980 ANNUAL MEETING IN COLORADO

THE ANNUAL MEETING OF AASP FOR 1980 WILL BE HELD AT THE KEYSTONE LODGE, KEYSTONE, COLORADO, 14-18 OCTOBER 1980. A SCHEDULE FOR THE MEETING, AND AN EXPLANATION OF THE TRAVEL ARRANGEMENTS BETWEEN THE DENVER AIRPORT AND KEYSTONE LODGE, WERE PUBLISHED IN AASP NEWSLETTER FOR APRIL, 1980. THE REGISTRATION FORMS FOR THE MEETING AND FOR ACCOMMODATIONS AT THE LODGE WERE DISTRIBUTED WITH THAT NEWSLETTER. A FEW ADDITIONAL COPIES ARE AVAILABLE FROM YOUR NEWSLETTER EDITOR IF NEEDED.

REMINDER NO. 1: THE DEADLINE FOR RESERVATIONS AT KEYSTONE LODGE IS 29 AUGUST 1980. EARLY REGISTRATION IS ADVISED FOR BEST CHOICE OF ROOMS OR CONDOMINIUMS. MAIL YOUR HOUSING RESERVATION FORM TOGETHER WITH A DEPOSIT FOR THE FIRST NIGHT'S LODGING TO: KEYSTONE RESORT ASSOCIATION, CENTRAL RESERVATIONS, BOX 38, DILLON, CO 80435.

REMINDER NO. 2: THE DEADLINE FOR PREREGISTRATION FOR THE MEETING IS 3 OCTOBER 1980. REGISTRATION WILL ALSO BE POSSIBLE AT THE MEETING, BUT PREREGISTRATION IS ADVISED, ESPECIALLY FOR THE FIELD TRIP, AND IS REQUIRED IF YOU WISH TO TAKE THE CHARTERED BUSES FROM AND TO THE AIRPORT IN DENVER. MAIL YOUR REGISTRATION FORM TOGETHER WITH PAYMENT TO: AASP ANNUAL MEETING, C/O LOIS ELMS, THE WESTERN EXPERIENCE, 5650 SO. SYRACUSE #117, ENGLEWOOD, CO 80110.

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ROCKY MOUNTAIN HIGH—KEYSTONE '80. BE THERE!

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AASP NEWSLETTER IS PUBLISHED QUARTERLY BY AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS, INC.

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LETTERS TO THE EDITOR

Dear Editor,

One of the results of the high cost of energy is the high cost of travel, and this problem has an important bearing on the leadership of AASP that will become more rather than less acute with time. Each nominee for the Board of Directors must promise, before he or she can be formally nominated, to attend three meetings of the Board in the year that he or she will serve on the Board: first, the meeting at the end of the Annual Meeting in the fall; second, the mid-year meeting of the Board in the spring; and third, the meeting at the beginning of the Annual Meeting the next fall. AASP has never subsidized travel of Board members to any of these three meetings. Most Annual Meetings, and virtually all mid-year meetings, are in the middle part of the United States. Until recent years, travel from the East or West Coast or from Canada to the central United States was not exorbitantly expensive and travel funds were generally available, at least in my experience at a university and then at USGS. Now the situation is entirely different; because travel funds are difficult to obtain, and travel is very expensive, it appears that in the future, members of the Board will be drawn almost entirely from those who live in the central part of the United States and those who work for companies and perhaps a few universities where adequate travel funds are still available.

AASP has developed into a large organization with a worldwide membership. I do not believe the best interests of these diverse members, who after all are the organization, are served by rules that almost guarantee a provinciality of the AASP leaders based on where they live and work and who their employers are.

Naturally this problem has been discussed before in Board meetings, and there has always been a strong sentiment against subsidizing travel by Board members. A possible compromise would be that the prospective nominee would have to find funding for two of the three meetings he or she would have to attend, but if, for one of the meetings, the member stated that he or she could not obtain travel funding despite the member's best efforts (the same formula as used for waiver of page charges in PALYNOLOGY), then AASP would subsidize that one trip. Maybe this would lead to a small increase in dues, but surely with a membership of more than 500, a $1 or $2 dues increase would be sufficient. This seems to me a small price to pay for more representative leadership than we can possibly get under the present system. Travel will never be cheap again. In my opinion, the Association must begin subsidizing part of the travel by its Board members.

Norman Frederiksen

Dear Norm,

This is indeed becoming a problem. In fact, nominees must agree to attend even more meetings than you mention, because no term of office in AASP is now less than two years, and the Secretary-Treasurer and Editor traditionally serve longer than that. Many major scientific societies have a program of the kind you suggest. But will members of AASP agree to contribute directly, through dues payments, to support travel by officers of AASP?

Ed.

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CANDIDATES FOR AASP OFFICES

The Nominating Committee for 1980 has selected nine members of AASP to run for offices on the Board of Directors. The bylaws provide that additional nominations may be made by members in good standing, by petition, to supplement the slate chosen by the committee. Ballots will be mailed to the membership in July. As this NEWSLETTER goes to press the slate of candidates consists of the following.

For President-Elect: George Hart and Lewis Stover. The winner will serve for one year as President-Elect and then as President for the following year.

For Secretary-Treasurer: John Clendening and Norman Frederiksen. Clendening is the incumbent in this office.

For Managing Editor: Vaughn Bryant. Bryant is unopposed for this office. Other members of the editorial staff of AASP are appointed by the Managing Editor.

For Directors at Large: Terry Beach, Carol Chmura, David McIntyre, and Reginald Harris. Two positions are to be filled for two-year terms. The new Directors at Large will serve together with present Directors Sarah Damassa and Charles Felix in the first year. As provided by the bylaws, four Directors at Large are in office at any one time; two are elected each year to serve two-year terms that overlap with those of two previously elected Directors.

Following results of balloting, new officers will be installed at the Annual Meeting in October.

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AASP MID-YEAR MEETING

The mid-year meeting of the AASP Board of Directors was held at Fiesta Inn, Tempe, Arizona on 17 and 18 April 1980. Board members in attendance included: James Canright, President; John Bennett, President-Elect; John Clendening, Secretary-Treasurer; Vaughn Bryant, Managing Editor; and Directors at Large Jon Bujak, Jack Burgess, and Charles Felix. AASP members present were Bud Simpson, Joe Guennel, and Don Benson.

The agenda included reports on annual meetings. The final report on the 1979 meeting in Dallas was presented by Bud Simpson. Reports on up-coming meetings were given by Joe Guennel (Keystone, Colorado, 1980), and Don Benson (New Orleans, 1981). Various committee reports were presented including those on nominations, archives, travel grants, and public relations. Proposals were made to appoint committees on guidelines for nominations, ballots, and the student paper awards. The Board of Directors will meet again at the annual meeting in Keystone, Colorado. All Board meetings are open to AASP members.

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LYNN MITCHELL BROWN

WORD HAS BEEN RECEIVED OF THE UNTIMELY DEATH OF LYNN MITCHELL BROWN, AASP MEMBER FROM FIFE, SCOTLAND. MISS BROWN MET WITH A FATAL ACCIDENT WHILE CLIMBING IN THE SCOTTISH HIGHLANDS.

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ACID FATAL TO LAB WORKER

A NEWS ITEM PUBLISHED IN THE HOUSTON POST, 29 APRIL 1980, REPORTS ON A FATAL ACCIDENT INVOLVING HYDROFLUORIC ACID. BECAUSE HYDROFLUORIC ACID (HF) IS A COMMON REAGENT IN PALYNOLOGY LABORATORIES, ATTENTION SHOULD BE GIVEN TO THE INCIDENT BY AASP MEMBERS.

A HOUSTON RESIDENT, WHO WAS WORKING ALONE IN A LABORATORY WHEN THE ACCIDENT OCCURRED, DROVE HIMSELF TO THE HOSPITAL WHERE HE DIED. THE LABORATORY MANAGER THEORIZED THAT THE INDIVIDUAL STUMBLED AND SPILLED ABOUT "HALF A BEAKER" OF HYDROFLUORIC ACID ON HIMSELF. HE THEN APPARENTLY REMOVED HIS MASK WHILE TRYING TO REMOVE THE ACID, AND IS BELIEVED TO HAVE INHALED THE FUMES. THE WORKER WAS CHARACTERIZED AS VERY CAREFUL, AND THE VICTIM OF A FREAK ACCIDENT.

LABORATORY WORKERS MIGHT BENEFIT BY BEING MADE AWARE OF THIS TRAGEDY, AND BEING REMINDED OF THE HAZARDS OF HF.

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NSF TRAVEL GRANTS TO 5.IPC

THE BOARD OF DIRECTORS OF AASP HAS BEEN NOTIFIED BY THE NATIONAL SCIENCE FOUNDATION (NSF) THAT A GROUP AWARD FOR TRAVEL TO THE INTERNATIONAL PALYNOLOGICAL CONFERENCE HAS BEEN MADE. AASP APPLIED FOR THE FUNDS TO ASSIST MEMBERS IN TRAVELING TO CAMBRIDGE, ENGLAND, FOR THE CONFERENCE TO BE HELD 29 JUNE TO 6 JULY 1980.

APPLICATIONS WERE REVIEWED BY THE AASP GRANTS COMMITTEE, CHARLES FELIX (CHAIRMAN), PAT BURBRIDGE, SUJOY GUPTA, AND FRED STONE. RECIPIENTS OF THE AWARDS, WHICH AVERAGE $750 EACH, WILL BE: TOVE BOCKELIE (PALEONTOLOGICAL MUSEUM, OSLO); MARGARET BOLICK (UNIV. NEBRASKA); JAMES CANRIGHT (ARIZONA STATE UNIV.); JAMES DOYLE (UNIV. CALIFORNIA, DAVIS); PATRICIA GENSEL (UNIV. NORTH CAROLINA); JOHN GRAYSON (AMOCO PRODUCTION CO.); TERRY HUTTER (SHELL OIL CO.); DOUGLAS NICHOLS (USGS); ALFRED TRAVERSE (PENNSYLVANIA STATE UNIV.); AND REED WICANDER (CENTRAL MICHIGAN UNIV.).

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TURKISH COMMITTEE FOR PALYNOLOGY

THE TURKISH COMMITTEE FOR PALYNOLOGY (TCP) WAS FOUNDED AS A SECTION OF THE GEOLOGICAL SOCIETY OF TURKEY ON 2 SEPTEMBER 1979 IN ANKARA. TCP HAS AFFILIATED WITH THE INTERNATIONAL COMMISSION FOR PALYNOLOGY (ICP). TCP'S FIRST MEETING WAS HELD IN MARCH 1980; PLANS WERE MADE TO HOLD THE FIRST PALYNOLOGICAL CONFERENCE IN MARCH 1981 IN ANKARA.

THE FIFTEEN MEMBERS OF TCP WOULD LIKE TO EXCHANGE INFORMATION WITH OTHER PALYNOLOGISTS ELSEWHERE IN THE WORLD. WRITE TO: VOLKAN S. EDIGER, PRESIDENT, TCP, GEOLOGICAL SOCIETY OF TURKEY, P.K. 464 KIZILAY, ANKARA, TURKEY.

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BULLETIN BOARD

FIFTH INTERNATIONAL PALYNOLOGICAL CONFERENCE (5.IPC), CAMBRIDGE, ENGLAND, 29 JUNE - 6 JULY 1980.

SECOND INTERNATIONAL MEETING OF THE ASSOCIATION FOR ANGIOSPERM PALEOBOTANY (IAAP), READING, ENGLAND, 7-13 JULY 1980.

FOURTH COLLOQUIUM ON PALEOBOTANY AND PALYNOLOGY, MEXICO CITY, 21-26 JULY 1980; (ELOY SALAS, INST. MEXICANO DEL PETROLEO, AV. 100 METROS #152, APARTADO POSTAL 14-805, MEXICO 14, D.F.).

THIRTEENTH INTERNATIONAL BOTANICAL CONGRESS (XIII.IBC), SYDNEY, AUSTRALIA, 21-28 AUGUST 1981; (AUSTRALIAN ACAD. SCIENCE, P.O. BOX 783, CANBERRA CITY 2601, AUSTRALIA).

THIRD NORTH AMERICAN PALEONTOLOGICAL CONVENTION (III.NAPC), MONTREAL, CANADA, 5-11 AUGUST 1982; (COLIN STEARN, DEPT. GEOL. SCI., MCGILL UNIV., 3450 UNIVERSITY ST., MONTREAL, QUEBEC H3A 2A7, CANADA).

COMMISSION INTERNATIONALE DE MICROFLORE DU PALEOZOIQUE (CIMP) JOINT MEETING WITH AASP, DUBLIN, IRELAND, 13-15 SEPTEMBER 1982; (GEOFF CLAYTON, DEPT. GEOL., TRINITY COLLEGE, DUBLIN 2, EIRE).

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AASP TO MEET IN SAN FRANCISCO IN 1983

THE 1983 ANNUAL MEETING OF AASP WILL BE HELD AT THE AIRPORT HILTON IN SAN FRANCISCO. AT PRESENT IT IS PLANNED TO HAVE A THREE-DAY MEETING ON WEDNESDAY, 26 OCTOBER THROUGH FRIDAY, 28 OCTOBER, AND A ONE-DAY FIELD TRIP ON SATURDAY, THE 29TH. IN ADDITION, PLANS ARE BEING MADE FOR A SYMPOSIUM TO BE HELD ON TUESDAY, 25 OCTOBER.

SUGGESTIONS ARE BEING TAKEN NOW FOR THE TOPIC OF THE 1983 SYMPOSIUM. VIRGIL WIGGINS IS ASKING MEMBERS TO SEND ONE OR MORE SUGGESTED TOPICS TO HIM. HE SAYS HE WANTS WHAT YOU WANT, SO LET HIM KNOW WHAT YOU WANT! SEND YOUR IDEAS TO: V. D. WIGGINS, CHEVRON USA INC., P.O. BOX 3862, SAN FRANCISCO, CA 94119.

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POSITIONS AVAILABLE

PHILLIPS PETROLEUM COMPANY HAS OPENINGS FOR STRATIGRAPHIC PALYNOLOGISTS AT SEVERAL LEVELS. APPLICANTS WITH PH.D. OR M.S. DEGREES WILL BE CONSIDERED; INDUSTRY EXPERIENCE IS PREFERRED. THE JOBS WILL BE LOCATED AT PHILLIPS' CORPORATE HEADQUARTERS IN BARTLESVILLE, OKLAHOMA. CANDIDATES SHOULD SEND A RÉSUMÉ AND NAMES OF REFERENCES TO: H. A. KUEHNERT, PHILLIPS PETROLEUM COMPANY, 242 FRANK PHILLIPS BUILDING, BARTLESVILLE, OK 74004.

"I NEED PALYNOLOGISTS." A NUMBER OF AASP MEMBERS HAVE RECEIVED THIS MESSAGE FROM SEAPORT RECRUITING GROUP, 2811 NIMITZ, SUITE B, SAN DIEGO, CA 92106. NO SPECIFICS ARE AVAILABLE, BUT IF YOU ARE INTERESTED YOU MIGHT WANT TO WRITE, OR GIVE RAPLH W. FULLERTON A CALL AT 714-223-5591.

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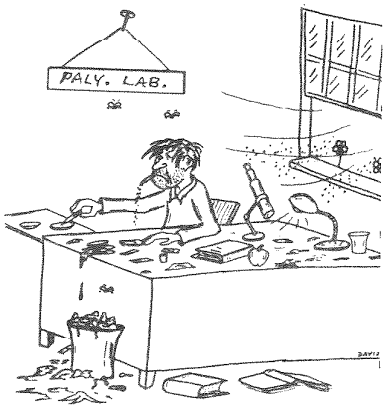

BROCHURE ON CAREERS IN PALYNOLOGY

During the past year the AASP Board of Directors has been working on the text and illustrations to be used in a brochure on Careers in Palynology. The task was conducted for two reasons. First, over the past two years AASP has received dozens of requests for information on the career potential in palynology and on how one should prepare for a career in the field. Second, a stated purpose of the Association is ",,,to promote the science of palynology," and to provide that ",,,information,,,on the subject may be disseminated,,,to the public,,,."

After nearly a half dozen drafts, the career brochure is now being prepared; it will be printed in July. It will present a brief overview of the discipline, and it invites the reader to write for more information concerning specific institutions where academic coursework and research can be pursued. Because these requests for more information will be sent to Managing Editor Vaughn Bryant, he needs your help in determining how to respond.

If you are currently employed by a college or university that offers coursework and (or) degrees in palynology, please send an outline of your program to Vaughn Bryant. In this way packets of information can be prepared on different kinds of programs, to be sent out upon request. This process may also help you to attract qualified graduate students to your academic and research programs. It would be best to send a brief summary of your program outlining its emphasis. As a minimal request, Vaughn asks the premission of faculty members to use their name, area of palynological expertise, and institutional address.

Please do not delay! This information is needed this summer so that Vaughn can begin responding to the requests already received! If you would like a copy of the brochure, please write for one. Write to: Vaughn M. Bryant Jr., Managing Editor, AASP, Dept. Anthropology, Texas A&M University, College Station, TX 77843.

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Rocky Mountain High—Keystone '80. Be there!

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ANOTHER "LENTIN & WILLIAMS"?

Lentin and Williams (Judi and Graham, that is) are at it again. Another Index is in the process of compilation. The 1980 edition will include all new papers up to and including July, 1980. The compilers have 61 papers that include dinoflagellate taxonomy on hand. They worry, however, that they may be missing something.

Following is a list of authors and publications dates. If you notice a reference missing from the list, notify: J. K. Lentin, L.I.B. Consultants, 3650 21st Street N.E., Calgary, Alberta T2E 6V6; telephone (403) 230-2519.

Artzner et al. (1979); Ashraf (1979); Beju (1979); Boltenhagen (1977), Bradford (1977); Brideaux (1977); Bujak (1979); Burger (1980); Chataeuneuf et al. (1978); Davey (1975, 1978, 1979 a-d); De Coninck (1977); Dorhofer et al. (1980); Drugg (19/8); Du Chene (1977); Duxbury (1979 a & b); Federova (1976); Fensome (1979); Fenton et al. (1980); Fisher et al. (1979); Harland (1977, 1979 a & b); Harland et al. (1979); He et al. (1979); Jain (1975 a & b); Jain et al. (1977); Lentin et al. (1980); Loeblich et al. (1974, 1977); Matsuoka (1974, 1976 a & b); May (1980); May et al. (1979); Muir et al. (1978); Norris (1978 a & b); Pierce Damassa (1979 a & b); Reid (1977); Sarjeant (1978 a & b, 1979); Schumacker-Lambry (1978); Srivasta et al. (1969); Stover (1977); Stover et al. (1977); Urkmen et al (1978); Whitney (1979); Williams (1978); Wilson (1977, 1978).

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POSITION WANTED

Dr. Sukla Sengupta seeks a position as palynologist. She has wide experience in angiosperm palynology, and has been working on Tertiary and Quaternary Indian assemblages in connection with both stratigraphic and environmental studies. She worked for ten years at Imperial College in London on experimental and theoretical studies of carbonization of spores and pollen under different temperature and pressure regimes and in different rock matrices. During this time she also worked on Precambrian microfossil assemblages from Australia, India, and the U. K. She is experienced in SEM, TEM, STEM, and light microscopy. For further details, curriculum vitae, and references, please contact: Dr. Sukla Sengupta, 17 Lansdowne Terrace, Calcutta 700026, India.

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HONORARY MEMBERSHIP IN AASP

The Board of Directors of AASP will consider nominations for honorary membership in the organization. The title of Honorary Member may be granted to individuals who have made distinguished contributions to the science of palynology. AASP members are invited to nominate deserving individuals. Nominations, which should include supporting statements or documentation, can be sent to AASP President Jim Canright. The Board of Directors will consider the nominations and make final decisions. Names may be submitted at any time. At present there are four Honorary Members of AASP; they are: Alfred Eisenack, William S. Hoffmeister, Leonard R. Wilson, and Knut Faegri. Faegri was elected to honorary membership in 1977, and the others in 1975.

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FOCUS

DEPARTMENT OF ANTHROPOLOGY
ARIZONA STATE UNIVERSITY

The Palynology Laboratory of the Department of Anthropology at Arizona State University is primarily a teaching facility for archeological pollen analysis. Normally, students take first a formal course to obtain basic experience in extracting, identifying, and analyzing the pollen of sediment samples from archeological sites and modern terrestrial surfaces. They then undertake supervised research on contracted projects and, when prepared, independent research at the MA or PhD thesis level. Research in progress at the moment centers on problems of inter- and intra-site palynostratigraphy and the palynological expression of human behavior patterns, e.g., landscape disturbance, plant food and raw material processing and disposal activities, and agricultural intensification. Research plans for next academic year will allow extension of prior studies in the reconstruction of environmental changes of the last 2000 years in the American Southwest.

Our contract activities offer students opportunities to work with a variety of Holocene pollen floras as well as a variety of problem orientations. Our position in a department of anthropology with a strong research tradition in archeology at a university with strong programs in Quaternary geology, physical geography, and paleobotany, offers many resources to students with interdisciplinary interests. At the intermediate (MA) level, students are expected to develop methodological sophistication in the formulation of field and laboratory research designs appropriate to interdisciplinary pollen studies, with emphasis placed on matters of experimental control and sampling strategies. Advanced students are encouraged to develop expertise in computer applications and use of multivariate models in vegetation and paleoenvironmental reconstructions.

James Schoenwetter

PALEOENVIRONMENTAL LABORATORY
UNIVERSITY OF ARIZONA

Researchers at the Paleoenvironmental Laboratory, Department of Geosciences, University of Arizona, are primarily concerned with the reconstruction of past environments and climates in the American Southwest and arid regions in general. We are especially interested in the last Ice Age and the transition to the present conditions. The two main approaches pursued toward this goal are: (1) analysis of plant and animal remains from packrat (Neotoma spp.) middens, and (2) analysis of pollen content in sediment sections.

A review of the major paleoenvironmental changes in the arid Southwest (from California through Texas and northern Mexico) occurring during the last 22,000 years derived from packrat midden analysis was recently published by Van Devender and Spaulding (Science, 1979). To broaden the paleoclimatic data set of this research, supported by a National Science Foundation grant to Paul S. Martin, the geographic range of midden samples collected has been extended into the eastern Grand Canyon (Ken Cole and Jim I. Mead), northeastern Nevada (Robert S. Thompson), and New Mexico (Thomas Van Devender and Julio Betancourt). Besides plant particles, animal remains are also assembled in packrat middens. The combined analysis of herpetological and mammal remains associated with plants has been shown to be fruitful (Thomas Van Devender, Jim I. Mead, A. Phillips), especially when associated with mummified dung and skeletal remains, e.g., the Harrington mountain goat (Oreamnos harringtoni). Aspects of late Pleistocene faunal extinction thus continue to be a rewarding research topic in the Southwest, mainly under the patronage of P. S. Martin. Excavation of cave deposits in the Grand Canyon (Jim I. Mead) offer an excellent opportunity for obtaining further insight into the extinction problem. The principal question remains the cause and effect relationship between environmental changes and (or) man's impact and the actual extinction, requiring excellent temporal control of the respective records. Studying pollen and plant cuticles from a sequence of dung deposits of the extinct ground sloth (Nothrotheriops shastense) from various cave deposits in the Southwest could provide new insight on the dietary habits of the sloth (R. S. Thompson et al.) and its relation to extinction. Similar research on remains of the South American extinct ground sloth (Mylodon sp.) perhaps may advance the question in the light of the wide range of different environments involved and the more detailed paleoenvironmental records available (V. Markgraf). The theoretical ramifications of the extinction on a more recent scale are being studied in the Galapagos Islands (Dave Steadman) in collaboration with the Smithsonian Institution.

The advantage of detail concerning flora and habitat which can be recovered from packrat midden analysis is coupled with the disadvantage of the lack of temporal continuity of the record. Palynologic research on sediment sections remains the principal way of establishing continuous paleoenvironmental chronologies. Although differing in both spatial and temporal resolution, a combination of the two paleoenvironmental methods is considered the most promising.

Geographic areas where palynologic work is underway, partially supported by a National Science Foundation grant to V. Markgraf, are: northeastern Nevada (R. S. Thompson); southwestern Nevada (W. Woolfenden), central Colorado (V. Markgraf, L. Scott, and P. Fall), northern Arizona (P. Fall, B. Fine), western Mexico (R. B. Brown, B. Fine), the Philippines (P. Payawal), and Argentina (V. Markgraf). Fossil south Chilean and Antarctic assemblages and a possible modern Sonoran analogue for "oculata"-type pollen (mainly Upper Cretaceous) are being studied along with other pre-Quaternary assemblages from the Southern Hemisphere (L. M. Cranwell). Extensive studies on the relation between modern pollen dispersal and vegetation (specifically for the Tucson area: M. K. O'Rourke) and recent pollen spectra and vegetation are a primary concern for the calibration of fossil pollen spectra. Numerical and statistical techniques are applied to analyze objectively this information. The principal reason for the wide latitudinal range of paleoclimatic chronologies under study, including latitudes in the Southern

(cont'd., p. 6)

HEMISPHERE, IS THAT ONLY INTRA- AND INTER-HEMISPHERIC CORRELATION WILL PROVIDE A DATA SET SUFFICIENTLY LARGE SO AS TO DISCERN THE GENERAL TRENDS OF GLOBAL CLIMATIC CHANGES AND THEIR VARIABILITY. THIS APPROACH ULTIMATELY MAY BRING US A STEP NEARER TO THE UNDERSTANDING OF THE CAUSE OF CLIMATIC CHANGES.

CONSIDERING THE MORE RECENT PALEOENVIRONMENTAL CHANGES AND THEIR RELATION TO ARCHEOLOGICALLY KNOWN CHANGES IN HUMAN POPULATION AND SUBSISTENCE PATTERNS, CONVENTIONAL PALYNOLOGIC ANALYSIS OF MATERIAL IN ARCHEOLOGIC CONTEXT CANNOT PROVIDE THE ANSWERS. ONLY THE UNDERSTANDING OF THE EXTENT AND TYPE OF ENVIRONMENTAL CHANGES UNDER NATURAL CONDITIONS, PROVIDED BY DETAILED PALEOENVIRONMENTAL ANALYSIS OF RECORDS UNDISTURBED BY DIRECT HUMAN IMPACT, MAY ADVANCE THE QUESTION. THIS TYPE OF RESEARCH FOCUSES MAINLY IN THREE REGIONS: NORTHERN ARIZONA (P. FALL, B. FINE), NEW MEXICO (T. R. VAN DEVENDER, J. BETANCOURT), AND WESTERN MEXICO (R. B. BROWN).

VERA MARKGRAF

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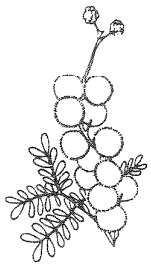

XIII INTERNATIONAL BOTANICAL CONGRESS

THE THIRTEENTH INTERNATIONAL BOTANICAL CONGRESS (XIII.IBC) IS TO BE HELD IN AUGUST, 1981, IN SYDNEY, AUSTRALIA. THE MEETINGS WILL CONVENE AT THE UNIVERSITY OF SYDNEY, WHICH IS A CONVENIENT CENTER FOR FIELD TRIPS TO EXAMINE THE DIVERSE FLORA IN ALL PARTS OF THE CONTINENT. SYDNEY IS SITUATED CLOSE TO BOTANY BAY, WHERE JOSEPH BANKS BEGAN THE EXPLORATION OF THE AUSTRALIAN FLORA.

THE SCIENTIFIC PROGRAM INCLUDES PLENARY SESSIONS, SYMPOSIA, WORKSHOPS, AND CONTRIBUTED PAPERS. THE INTERNATIONAL COMMISSION FOR PALYNOLOGY AND THE INTERNATIONAL ORGANISATION FOR PALAEOBOTANY, ALONG WITH OTHER INTERNATIONAL GROUPS, WILL BE CONDUCTING ACTIVITIES AT XIII.IBC. MEETINGS OF THE INTERNATIONAL BUREAU OF PLANT TAXONOMY WILL BE HELD, ALSO. THIRTY NINE FIELD TRIPS HAVE BEEN PROPOSED, WITH SUBJECT MATTER RANGING FROM SILURIAN PALEOBOTANY TO LIVING VEGETATION; TRANSPORTATION FOR THE VARIOUS TRIPS WILL BE BY COACH, PLANE, OR BOAT.

THE FIRST CIRCULAR HAS ALREADY BEEN DISTRIBUTED. ANYONE WISHING TO RECEIVE THE SECOND CIRCULAR SHOULD WRITE TO: XIII INTERNATIONAL BOTANICAL CONGRESS, AUSTRALIAN ACADEMY OF SCIENCE, P.O. BOX 783, CANBERRA CITY 2601, AUSTRALIA.

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REVIEWS

THE QUATERNARY OF ISRAEL, BY AHARON HOROWITZ; ACADEMIC PRESS; 1979, 416 P., $45.00.

THIS BOOK WILL PROBABLY STAND AS A LANDMARK EFFORT AND, BY THE END OF THE CENTURY, REPRESENT AND REFLECT THE LEVEL OF THEORETICAL, METHODOLOGICAL, AND TECHNICAL SOPHISTICATION CHARACTERIZING QUATERNARY STUDIES IN THE 1970's. IT IS EXTRAORDINARILY WIDE RANGING IN BOTH TEMPORAL AND DISCIPLINARY SCOPE; FIRMLY BASED ON PRESENTLY ACCEPTABLE THEORETICAL PERSPECTIVES OF SYSTEMS ANALYSIS AND UNIFORMITARIANISM; SENSITIVE TO THE DEMANDS OF DEDUCTIVE LOGIC IN REGARD TO RESEARCH DESIGN; PACKED WITH NEW INFORMATION VIEWED IN TERMS OF SYNTHETIC INTEGRATION WITH THE BITS AND PIECES OF DATA AND INTERPRETATION PREVIOUSLY AVAILABLE ON ALMOST EVERY SIGNIFICANT ISSUE OF CONCERN IN QUATERNARY RESEARCH; WELL WRITTEN AND WELL ILLUSTRATED. IF YOU GET THE IMPRESSION THAT I LIKE THIS BOOK AND RECOMMEND IT FOR USE AS A REFERENCE VOLUME, FOR PERSONAL ENJOYMENT AND FOR TEACHING, YOU ARE CORRECT. IF YOU GET THE IMPRESSION THAT I HAVE FOUND IT IMPOSSIBLE TO REVIEW AS A WHOLE IN BRIEF FASHION, YOU ARE CORRECT AGAIN.

THE SCOPE OF THE STUDY IS BOTH ITS VIRTUE AND ITS CHALLANGE FOR THE REVIEWER. HOROWITZ'S OBJECTIVE IS TO IDENTIFY THE NATURAL PROCESSES OF LANDSCAPE FORMATION THAT HAVE OCCURRED IN ISRAEL THROUGHOUT THE ENTIRETY OF THE QUATERNARY, HOW THOSE PROCESSES INTERACTED THROUGH TIME, WHAT FACTORS INFLUENCED BOTH THEIR CHARACTER AND THEIR INTERACTIVE RELATIONSHIPS AT ANY GIVEN LOCATION IN ISRAEL AT ANY GIVEN TIME DURING THE QUATERNARY, AND THE EFFECTS OF THOSE TEMPORAL AND SPATIAL VARIATIONS ON THE CULTURAL SYSTEMS OF THE INHABITANTS OF ISRAEL. SUBSEQUENT TO AN INTRODUCTORY CHAPTER WHICH REVIEWS EARLIER QUATERNARY STUDIES AND ESTABLISHES THE CONCEPTS, AIMS, AND TERMINOLOGY OF THE PRESENT VOLUME, HOROWITZ PRESENTS AN ANALYSIS OF THE MODERN PHYSICAL GEOGRAPHY OF ISRAEL. THIS CHAPTER, WHILE DECEPTIVELY EASY TO READ CASUALLY, IDENTIFIES HOROWITZ'S POSITION ON THE NATURE OF THE "PRESENT" FROM WHICH PERSPECTIVE THE NATURE OF THE "PAST" MAY BE INTERPRETED.

THE NEXT THREE CHAPTERS DEAL WITH THE GEOLOGICAL RECORD, BEGINNING WITH STRUCTURE AND TECTONIC DEVELOPMENT AND PROGRESSING THROUGH PRE-QUATERNARY GEOLOGY AND QUATERNARY STRATIGRAPHY. THOUGH THESE CHAPTERS ARE PRIMARILY DESCRIPTIVE, HOROWITZ UTILIZES THE DATA CONTINUOUSLY TO ADVANCE INTERPRETATIONS OF GEOMORPHOLOGICAL VARIATION THROUGH TIME RESULTING FROM THE INTERACTION OF TECTONIC, HYDROGRAPHIC, AND CLIMATIC FACTORS AND SEA-LEVEL CHANGES ON THE STRUCTURAL GEOLOGY OF THE COUNTRY. THOUGH THIS IS THE SECTION OF THE BOOK THAT I HAD MOST DIFFICULTY WITH AS A NON GEOLOGIST, IT EXPRESSES INTERPRETATIONS THAT CRUCIALLY STRUCTURE ALL SUBSEQUENT RECONSTRUCTIONS OF THE QUATERNARY PALEOENVIRONMENTS OF ISRAEL.

THE CHAPTER ON PALYNOLOGY IS DIVIDED INTO THREE SECTIONS IN WHICH RECENT, QUATERNARY, AND ARCHEOLOGICAL SITE CONTEXT RECORDS ARE PRESENTED AND INTERPRETED. THE RECENT POLLEN RECORDS FUNCTION HERE AS CONTROLS FOR PALEOVEGETATIONAL

(CONT'D., P. 7)

AND PALEOCLIMATIC INTERPRETATION OF THE FOSSIL POLLEN SPECTRA IN MUCH THE SAME MANNER AS KNOWLEDGE OF THE MODERN GEOMORPHOLOGY OF ISRAEL FUNCTIONS TO CONTROL INTERPRETATION OF PAST PROCESSES OF LANDSCAPE FORMATION. THE RECENT POLLEN SPECTRA ARE ESSENTIALLY OF TWO SORTS: RECORDS OF AIRBORNE POLLEN TRAPPED ON STICKY SLIDES (PRESENTED AND ANALYZED BY M. WEINSTEIN) AND RECORDS OF GRAB SEDIMENT SAMPLES FROM RECENT MARINE AND LACUSTRINE DEPOSITS. THE AVERAGED RESULTS OF RECENT TERRESTRIAL DEPOSIT SAMPLES ARE PROVIDED FOR FOUR DIFFERENT DISTRICTS IN ISRAEL, THOUGH THE SMALL NUMBER OF SUCH CONTROLS MAKES EVALUATION DIFFICULT, AND THE DATA OF SIX GROUNDWATER SAMPLES WERE ANALYZED TO DETERMINE THE CONTRIBUTION SOURCES OF MORE ANCIENT POLLEN MIGHT MAKE TO QUATERNARY SPECTRA.

I HAVE NO QUARREL WITH HOROWITZ'S APPLICATION OF THESE CONTROLS TO INTERPRETATION OF THE QUATERNARY POLLEN RECORDS RECOVERED FROM MARINE AND LACUSTRINE CORES. I AM SUSPICIOUS OF THEIR APPLICATION TO THE INTERPRETATION OF THE POLLEN SPECTRA OF ARCHEOLOGICAL SITES, HOWEVER, PARTICULARLY IN SITUATIONS WHERE THE AIRBORNE RECORDS ARE THE BASIS FOR ARGUMENT OF LONG-DISTANCE TRANSPORT OF POLLEN TO TERRESTRIAL DEPOSITS. THE APPLICATION OF INFERENCES GENERATED BY THE DATA OF SUB-AQUATIC DEPOSITS IN INTERPRETATION OF RECORDS FROM TERRESTRIAL DEPOSITS I FIND LESS PROBLEMATIC, GIVEN THE NECESSITY TO DO SO IF THE LATTER ARE TO BE INTERPRETED AT ALL. HOWEVER, I THINK THE PALEOECOLOGICAL CONCLUSIONS PRESENTED FOR THE ARCHEOLOGICAL POLLEN RECORDS SOMEWHAT OVERDRAWN WHEN THE CHARACTER OF THE CONTROL DATA IS CONSIDERED. FOR EXAMPLE, HOROWITZ CONCLUDES THAT THE PROMINENCE OF CHENOPODIACEAE POLLEN IN SOME SITE CONTEXTS, WHEN ACCOMPANIED BY POLLEN OF CULTIVATED TAXA, IS MOST LIKELY A REFLECTION OF THE DISTURBED HABITATS TO WHICH RUDERAL PLANTS ARE ADAPTED. PERHAPS SO, BUT THE FEW TERRESTRIAL DEPOSIT CONTROL SAMPLES AVAILABLE INDICATE THAT THE FREQUENCY OF CHENOPODIACEAE POLLEN MAY BE RELATED TO THE ABUNDANCE OF ATRIPLEX, RATHER THAN TO HABITAT DISTURBANCE.

THE QUATERNARY FAUNA CHAPTER, CONTRIBUTED BY E. TCHERNOV, PRESENTS BOTH A SYNOPTIC DESCRIPTION OF THE TAXA RECOVERED AND INTERPRETIVE SECTIONS OF THE PROCESSES OF DEVELOPMENT OF THE MODERN LEVANT FAUNA. THE LATTER PROVIDE THE READER AN ASSESSMENT OF THE DYNAMICS OF THE INTERACTIVE EFFECTS OF GEOMORPHOLOGICAL, CLIMATIC, AND HABITAT MODIFICATIONS THROUGH TIME ON THE GEOGRAPHIC DISTRIBUTIONS, MIGRATIONS, AND EXTINCTIONS OF FAUNAL CATEGORIES WHICH IS CAPPED BY A SIMILAR ASSESSMENT FOR FAUNAL ASSEMBLAGES EXPRESSING ECOLOGICAL CONDITIONS.

THE ANTHROPOLOGY CHAPTER IS DIVIDED INTO SECTIONS PREPARED BY DIFFERENT AUTHORS WITH THE RESULT THAT ANTHROPOLOGICAL CONCERNS ARE DIFFERENTIALLY EMPHASIZED IN THE SAME CHAPTER. EACH SECTION ACTUALLY CONSIDERS QUITE DIFFERENT TOPICS. I WAS DISAPPOINTED THAT NEITHER ARENSBURG AND RAK'S DISCUSSION OF EARLY MAN IN ISRAEL NOR RONEN'S DISCUSSION OF THE PALEOLITHIC INDUSTRIES ENGAGED THE ISSUE OF THE RELATIONSHIP OF BIOLOGICAL EVOLUTION AND TECHNOLOGICAL CHANGE. THIS MAY STEM FROM THEIR EVIDENT DISAGREEMENT ON WHETHER THE FEMALE SKELETON FROM TABUN CAVE SHOULD BE CLASSIFIED AS "PRE-NEANDERTHAL" (ARENSBURG AND RAK) OR "NEANDERTHALOID" (RONEN), SINCE BOTH THE SKELETON AND THE REMAINS OF MORPHOLOGICALLY MODERN MAN ARE ASSOCIATED WITH THE MOUSTERIAN ASSEMBLAGE.

THE SECTION OF THE CHAPTER DEALING WITH EPIPALEOLITHIC AND NEOLITHIC INDUSTRIES, BY BAR-YOSEF AND MINTZ, PROVIDES A REVISED ASSESSMENT OF THE CULTURAL SEQUENCE OF ISRAEL. THE ASSUMPTION THAT TYPOLOGICAL AND TECHNOLOGICAL CHARACTERISTICS OF AN ARTIFACT ASSEMBLAGE ARE ADEQUATE INDICES OF CHRONOLOGICAL POSITION IN THE ABSENCE OF RADIOCARBON DATES IS, I THINK, A BIT TOO STRONGLY ADHERED TO. BUT THAT CRITICISM MAY BE MOOT IN THIS SITUATION. I WAS NOT PARTICULARLY IMPRESSED WITH PHILLIPS' SECTION ON THE ORIGINS OF AGRICULTURE OR GOPHNA'S SECTION ON POST-NEOLITHIC SETTLEMENT PATTERNS FOR A COUPLE OF REASONS. GIVEN THE AIMS OF THIS WORK, BOTH TREATMENTS ARE TOO BRIEF AND I FELT BOTH WERE TOO BIASED BY THE POSITION THAT ECONOMIC REQUIREMENTS STRUCTURE THE BASIC CHARACTERISTICS OF ARCHEOLOGICAL RECORDS. ALL FOUR OF THE ANTHROPOLOGY CHAPTER AUTHORS APPARENTLY HOLD FAST TO THE IDEA THAT THE HOMINID AND HUMAN GROUPS WHO PRODUCED THE PRE-MIDDLE BRONZE AGE ARCHEOLOGICAL RECORD OF ISRAEL SEEM TO HAVE HAD NO RELIGIOUS, POLITICAL, OR SOCIOLOGICAL CONCERNS THAT MAY HAVE AFFECTED THEIR ADOPTION OF CERTAIN LIFE-STYLES OR THEIR DECISIONS TO SETTLE OR ABANDON CERTAIN DISTRICTS. THIS VIEW SEEMS PARTICULARLY INCONGRUOUS WHEN THE READER REFLECTS UPON THE PROBABILITY THAT THE PEOPLE INVOLVED WERE THE ANCESTOR POPULATIONS OF THOSE WHO CONTRIBUTED THE TORAH, GOSPELS, AND KORAN TO THE WESTERN WORLD.

GIVEN THE GENERAL CHARACTER OF SCIENTIFIC ARCHEOLOGICAL INTERPRETATION TODAY, I WOULD RECOGNIZE THAT MY CRITICISMS OF THE ANTHROPOLOGY CHAPTER MIGHT BE OVERDRAWN WERE IT NOT FOR THE DRAMATIC IMPACT OF THOSE BIASES ON THE CONCLUSIONS DEVELOPED IN THE LAST CHAPTER OF THE BOOK. THOUGH THE TOPICS OF QUATERNARY MORPHOTECTONIC EVOLUTION, QUATERNARY CLIMATE, AND QUATERNARY CHRONOLOGY ARE ALSO ADDRESSED, THE BULK OF THE CONCLUDING CHAPTER DEALS WITH THE RELATIONSHIPS OF PALEOENVIRONMENT AND HUMAN SETTLEMENT. ECONOMIC—PARTICULARLY FOOD RESOURCE EXTRACTION—NECESSITIES ARE TIME AND AGAIN RECOGNIZED AS THE MOTIVATING FACTOR FOR BEHAVIORAL CHANGES REFLECTED IN ARTIFACT TERMINOLOGY, ASSEMBLAGE TYPOLOGY, OR SETTLEMENT PATTERN. IT COMES AS NO SURPRISE, THEN, THAT HOROWITZ CONCLUDES THAT CERTAIN PALEOENVIRONMENTS WERE "FAVORABLE" AND OTHERS "UNFAVORABLE" FOR CULTURAL EXPRESSION IN THE ISRAELI SEQUENCE. NO OTHER CONCLUSIONS ARE PLAUSIBLE GIVEN THE STRUCTURE OF THE DEDUCTIVE ARGUMENT, IRRESPECTIVE OF THE NATURE OF THE AVAILABLE EVIDENCE.

IN BRIEF, THE QUATERNARY OF ISRAEL IS A MODEL BOOK IN TWO RESPECTS. IT IS A MODEL OF THE APPLICATION OF THE THEORETICAL AND METHODOLOGICAL CONCEPTS AND TECHNOLOGIES SIGNIFICANT TO QUATERNARY STUDIES IN THE 1970'S, AND IT IS A MODEL EXAMPLE OF THE PROBLEMS SUCH APPLICATIONS ENCOUNTER. IT OFFERS THE READER AN OPPORTUNITY TO AT ONCE APPRECIATE HOW MUCH WE ARE ABLE TO DISCOVER WHEN THE JOB IS WELL DONE, AND TO APPRECIATE HOW MUCH WE MUST FIND WAYS OF DOING BETTER. WHETHER IT IS MORE VALUABLE FOR THE FORMER OR FOR THE LATTER CONTRIBUTION IS A JUDGEMENT THAT CANNOT BE MADE NOW.

JAMES SCHOENWETTER

REVIEWS ARE CONTINUED ON P. 8

VOLCANIC ACTIVITY AND HUMAN ECOLOGY, EDITED BY PAYSON D. SHEETS AND DONALD K. GRAYSON: ACADEMIC PRESS: 1979. XVI + 644 P., $49.50.

THIS BOOK IS A COLLECTION OF 18 PAPERS, LARGELY ORIENTED TO THE MODERN AND PREHISTORIC CULTURAL RESPONSES TO VOLCANIC ERUPTIONS, WITH INTRODUCTORY AND CONCLUDING SECTIONS BY THE EDITORS; THE FORWARD IS BY H. E. MALDE.

TWO CONTRIBUTIONS EXPLORE THE EFFECTS OF VOLCANIC ASHFALL ON THE POLLEN RECORD. AMONG THE BETTER KNOWN VOLCANIC ERUPTIONS OF THE PAST IS THE EXPLOSION OF MOUNT MAZAMA APPROXIMATELY 6,700 YEARS AGO, WHICH FORMED PRESENT-DAY CRATER LAKE IN SOUTHEASTERN OREGON. ASH LAYERS FROM THE ERUPTION OCCUR IN CAVES, ALLUVIUM, AND IN LAKE SEDIMENTS THROUGHOUT THE PACIFIC NORTHWEST. IN THE SAME REGION ANOTHER ASH LAYER IS SOMETIMES FOUND IN OLDER SEDIMENTS; IT ORIGINATED FROM GLACIER PEAK IN NORTHERN WASHINGTON AND IS DATED ABOUT 11,250 YEARS OLD. THE PAPER "POLLEN INFLUX AND THE DEPOSITION OF MAZAMA AND GLACIER PEAK TEPHRA" BY E. BLINMAN, P. J. MEHRINGER, JR., AND J. C. SHEPPARD DOCUMENTS THESE ASH LAYERS IN POLLEN-BEARING SEDIMENTS AT LOST TRAIL PASS BOG, MONTANA, NEAR THE IDAHO BORDER (PREVIOUSLY REPORTED IN SCIENCE, V. 198, P. 257-261, 1977), AND IN ARCTIC AND ALPINE RESEARCH, V. 9, P. 345 368, 1977), AND AT WILDCAT LAKE, WESTERN WASHINGTON (REPORTED IN NORTHWEST SCIENCE, V. 51, P. 13-30, 1977). PRELIMINARY INFORMATION ON THE NEWLY DISCOVERED OCCURRENCE OF MAZAMA ASH AT WILD-HORSE LAKE, SOUTHWESTERN OREGON, IS PRESENTED FOR THE FIRST TIME, ALTHOUGH INCOMPLETELY STUDIED.

A GREAT DEAL OF VARIABLITY WAS FOUND IN THE MAZAMA ASHES; IT OCCURS UP TO 565 CM THICK AT WILDCAT LAKE. AT LOST TRAIL PASS BOG, THE MAZAMA ASH IS A SINGLE LAYER 7 CM THICK. BY THE CLEVER METHOD OF DETERMINING THE POLLEN CONCENTRATION IN THE ASH AND ASSUMING THE SAME RATE OF POLLEN INFLUX IN PEAT ABOVE AND BELOW THE ASH LAYER, IT WAS CALCULATED THAT THE 7 CM ASH LAYER ACCUMULATED DURING A 2.4 YEAR PERIOD (2.8 YEARS REPORTED IN THE SCIENCE ARTICLE).

RELATIVE POLLEN FREQUENCIES OF 7 SAMPLES FROM THE ASH ARE INTERPRETED BY BLINMAN, MEHRINGER, AND SHEPPARD AS INDICATING SEASONALITY OF DEPOSITION. LOW PINUS AND HIGH ARTEMISIA AND CHENOPODIACEAE ABUNDANCE IS EQUATED WITH INITIAL ASH DEPOSITION DURING THE AUTUMN, AND IN THE UPPER PORTION OF THE ASH LAYER, HIGH PINUS AND LOW GRAMINEAE AND CHENOPODIACEAE FREQUENCIES INDICATE DEPOSITION DURING THE SPRING OR SUMMER. USING THEIR PUBLISHED DATA, I NORMALIZED THE POLLEN FROM THE ASH LAYER TO NUMBER OF GRAINS PER SQUARE CM PER 1 YEAR. MY POLLEN INFLUX RESULTS ARE VERY DIFFERENT FROM THEIR RELATIVE FREQUENCY DIAGRAM. THE LOWER HALF OF THE ASH IS MARKED BY A DECREASE IN PINUS POLLEN INFLUX AND A BARELY SIGNIFICANT DECREASE IN ARTEMISIA; GRAMINEAE AND CHENOPODIACEAE INFLUX IS UNCHANGING THROUGHOUT THE PRE-ASH, ASH, AND POST-ASH LAYERS. PINUS INFLUX ALSO REVERTS TO PRE-ASH (AND POST-ASH) VALUES IN THE UPPER HALF OF THE ASH LAYER. THE ONLY DEVIATION FROM PRE-ASH AND POST-ASHFALL POLLEN INFLUX IN THE UPPER HALF OF THE ASH LAYER IS A SIGNIFICANT DECREASE IN THE "OTHER POLLEN" CATEGORY; THE AUTHORS MAY WISH TO REVIEW THEIR POLLEN DATA IN ORDER TO DISCOVER WHAT POLLEN TYPE IS RESPONSIBLE FOR THAT DECREASE. IT IS FURTHER APPARENT THAT, WHERE PINUS, ARTEMISIA, AND "OTHER POLLEN" INFLUX VALUES FLUCTUATE IN THE ASH, VARIATION IS ALWAYS A DECREASE FROM THAT IN PRE- AND POST-ASHFALL SEDIMENT. IF SEASONALITY OF DEPOSITION WAS RESPONSIBLE FOR LOW OR HIGH RELATIVE FREQUENCIES OF PINUS POLLEN, THEN THE LOW ABUNDANCE OF PINUS FROM AUTUMN DEPOSITION WOULD SHOW UP AS LOW INFLUX VALUES, AS IS THE CASE. HOWEVER, IF SEASONALITY IS THE DETERMINING FACTOR IN POLLEN CONTENT, HIGH PINUS FREQUENCIES OF SPRING AND SUMMER DEPOSITION SHOULD BE PRODUCED BY A HIGHER PINUS INFLUX THAN WOULD BE AVERAGED OVER THE ENTIRE YEAR. THE CALCULATED INFLUX VALUES DO NOT SHOW AN INCREASE IN PINUS. THIS SUGGESTS TO ME THAT, INSTEAD OF SEASONALITY OF DEPOSITION, THE POLLEN RECORD REFLECTS A SHORT-TERM DECREASE IN POLLEN INFLUX, PERHAPS CAUSED BY PLANT DAMAGE DUE TO ASHFALL.

REGARDLESS OF THE INTERPRETATION OF THE POLLEN CONTENT OF THE MAZAMA ASH, BLINMAN AND OTHERS CONCLUDE THAT THE ASHFALL HAD NO DISCERNIBLE LASTING EFFECT ON THE VEGETATION. THE POLLEN RECORD SHOWS THE ONSET OF DRIER CLIMATE CONDITIONS ABOUT 7,000 YEARS AGO IN THAT REGION, BUT THAT IS NOT RELATED TO VOLCANISM. D. K. GRAYSON, IN A PAPER ON THE VERTEBRATE REMAINS FROM CONNLEY CAVES IN THE FORT ROCK BASIN, ALSO CONCLUDES THAT, ALTHOUGH THE CHANGE IN CLIMATE TO DRIER CONDITIONS ABOUT 7,000 YEARS AGO IS SUPPORTED, THERE IS NO EVIDENCE FROM THE VERTEBRATE SUCCESSION THAT THE EXPLOSION OF MOUNT MAZAMA AFFECTED THE VERTEBRATE FAUNA.

THE SECOND PALYNOLOGIC PAPER IS "COMPARATIVE EFFECTS OF CLIMATIC CHANGE, CULTURAL IMPACT, AND VOLCANISM IN THE PALEOECOLOGY OF FLAGSTAFF, ARIZONA, A.D. 900-1300" BY R. H. HEVLY AND OTHERS. POLLEN ANALYSIS OF ARCHEOLOGIC SITES (NA 10754, MOUNT ELDEN PUEBLO, OLD CAVES PUEBLO, CITADEL SINK, AND A PREHISTORIC CORNFIELD) IN THE ASHFALL AREA OF SUNSET CRATER IN THE SAN FRANCISCO MOUNTAINS VOLCANIC FIELD WAS UNDERTAKEN TO DOCUMENT THE EFFECTS OF THE ELEVENTH THROUGH THIRTEENTH CENTURY PERIOD OF VOLCANIC ACTIVITY. IN SHORT, NO RELATIONSHIP WAS FOUND BETWEEN ERUPTIONS AT SUNSET CRATER AND THE POLLEN RECORD.

AS IS BECOMING MORE COMMON AMONG SOUTHWEST ARCHEOLOGICAL PALYNOLOGISTS, POLLEN DIAGRAMS ARE NOT PRESENTED IN THIS REPORT ON THE ABOVE SITES. INSTEAD, THE POLLEN DATA APPEARS IN THE FORM OF PINUS/JUNIPERUS RATIOS, ARBOREAL/NONARBOREAL POLLEN RATIOS, AND LARGE PINUS/SMALL PINUS RATIOS. THE UNFORTUNATE RESULT OF THIS PRACTICE IS THAT OTHERS CANNOT EVALUATE THE POLLEN RECORD FOR THEMSELVES FOR POSSIBLE REINTERPRETATION.

THE POLLEN-BASED PALEOCLIMATIC HISTORY OF THE FLAGSTAFF AREA, ALTHOUGH UNRELATED TO VOLCANISM, IS SUMMARIZED IN 25-YEAR INCREMENTS FOR THE PERIOD A.D. 900 TO 1300. THE JUSTIFICATION FOR THIS HIGH DEGREE OF RESOLUTION OF POLLEN DATA HAS NEVER BEEN ESTABLISHED EVEN THOUGH SUCH INTERPRETATIONS HAVE BEEN MADE FOR A LONG TIME.

AN UNFORTUNATE DEVELOPMENT IN SOUTHWEST POLLEN ANALYTICAL AND PALEOCLIMATE RESEARCH IS THAT SO MANY STUDIES ARE CONDUCTED AT ARCHEOLOGIC SITES AND SO FEW AT NON-ARCHEOLOGIC LOCALITIES. POLLEN ASSEMBLAGES FROM PUEBLOAN ARCHEOLOGIC SITES CONTAIN A MIXTURE OF BOTH ETHNOBOTANICAL AND REGIONAL

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VEGETATION INFORMATION. THE PRESENT STATE OF THE ART HAS NOT PROGRESSED TO THE STAGE WHERE THESE TWO COMPONENTS IN THE POLLEN DATA CAN BE DIFFERENTIATED AND EVALUATED SEPARATELY. FURTHERMORE, THE RELATIONSHIPS BETWEEN POLLEN, REGIONAL VEGETATION, AND CLIMATE ARE NOT FIRMLY ESTABLISHED IN THE SOUTHWEST. BECAUSE OF REAL DIFFICULTIES INVOLVED IN IDENTIFYING POLLEN FROM CULTURALLY-RELATED AND NON-CULTURAL ORIGINS, POLLEN DATA FROM PUEBLOAN SITES MAY NEVER PRODUCE A RELIABLE PALEOCLIMATIC RECORD.

THE BOOK INCLUDES A GOOD GENERAL SUMMARY BY F. M. BULLARD ON VOLCANOES AND TYPES OF ERUPTIONS; THERE ARE SECTIONS ON TEPHRA, SOILS, AND 3 PAPERS ON VOLCANIC HAZARDS. "BECAUSE OF ITS LONG RECORD OF SPASMODIC EXPLOSIVE ACTIVITY, MOUNT ST. HELENS PROBABLY IS THE VOLCANO MOST LIKELY TO ENDANGER PEOPLE AND PROPERTY IN THE WESTERN UNITED STATES" IS A TIMELY STATEMENT IN A PAPER ON VOLCANIC HAZARDS IN THE CASCADES BY D. R. CRANDALL, D. R. MULLINEAUX, AND C. D. MILLER. HISTORICAL VOLCANIC ERUPTIONS DISCUSSED IN GREAT DETAIL INCLUDE LAKAGIGAN (ICELAND), PARICUTIN (MEXICO), ILOPANGO (EL SALVADOR), THERA (AEGEAN SEA), AND MOUNT VESUVIUS (ITALY).

ALL THE PAPERS ARE EXCELLENT AND, COLLECTIVELY, FULFILL THE PROMISE OF THE BOOKS'S TITLE. THE PRINTING AND PAPER ARE OF HIGH QUALITY; PHOTOGRAPHS AND DIAGRAMS ARE REPRODUCED WELL. THE SUBJECT INDEX IS UNCOMMONLY THOROUGH FOR AN EDITED VOLUME OF INDIVIDUAL PAPERS. THE BOOK CAN BE PERUSED PROFITABLY BY ETHNOGRAPHERS, ARCHEOLOGISTS, AND ENVIRONMENTAL GEOLOGISTS, AND QUATERNARY PALYNOLOGISTS SHOULD TAKE NOTE OF THE TWO PAPERS, REVIEWED IN THIS NEWSLETTER, ON POLLEN ANALYSIS.

STEPHEN A. HALL

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