

# AASP NEWSLETTER

D. J. NICHOLS, EDITOR

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## AASP 1980 ANNUAL MEETING KEYSTONE, COLORADO

THE 1980 ANNUAL MEETING OF AASP WILL BE HELD AT KEYSTONE LODGE, KEYSTONE, COLORADO, 14-18 OCTOBER. KEYSTONE IS A MOUNTAIN RESORT 72 MILES WEST OF DENVER, LESS THAN A TWO HOUR DRIVE FROM DENVER'S STAPLETON INTERNATIONAL AIRPORT. ATTACHED TO THIS ISSUE OF AASP NEWSLETTER ARE THE OFFICIAL FORMS FOR REGISTRATION AND ROOM RESERVATION AT KEYSTONE.

### TRANSPORTATION

BUSES WILL BE CHARTERED FOR TRANSPORTATION OF MEETING PARTICIPANTS FROM THE DENVER AIRPORT TO KEYSTONE LODGE AND RETURN. BUSES WILL LEAVE FROM THE SHERATON INN NEAR THE AIRPORT AT 3:00, 5:00, AND 7:00 P.M. ON TUESDAY, 14 OCTOBER. TRANSPORTATION FROM THE AIRPORT TO THE SHERATON WILL BE PROVIDED BY COURTESY SHUTTLE BUS FROM THE BAGGAGE LEVEL AT THE AIRPORT. LOOK FOR BUSES MARKED SHERATON INN.

A HOSPITALITY ROOM WILL BE AVAILABLE AT THE SHERATON INN WHERE YOU CAN VISIT WITH COLLEAGUES WHILE WAITING FOR THE NEXT BUS. ON YOUR ARRIVAL AT THE INN, CHECK YOUR BAGS WITH THE BELLMAN AT THE DOOR AND PROCEED TO THE HOSPITALITY ROOM DESIGNATED ON THE HOTEL'S INFORMATION BOARD.

NOTE THAT ON THE REGISTRATION FORM THERE IS A PLACE TO MAKE YOUR BUS RESERVATION. IT IS ESSENTIAL THAT WE HAVE YOUR ADVANCE RESERVATION IN ORDER TO CHARTER AN ADEQUATE NUMBER OF BUSES. BE SURE TO INCLUDE PAYMENT ALONG WITH YOUR REGISTRATION FEE.

RETURNING FROM KEYSTONE, BUSES WILL GO DIRECTLY TO STAPLETON INTERNATIONAL AIRPORT. DEPARTURES FROM KEYSTONE WILL BE ON FRIDAY EVENING, 17 OCTOBER, AT 5:00 O'CLOCK AND AGAIN ON SATURDAY MORNING, 18 OCTOBER, AT 9:00 O'CLOCK.

IF YOU WISH TO DRIVE TO KEYSTONE, ENTERPRISE LEASING IS THE ONLY RENTAL CAR COMPANY THAT ALLOWS YOU TO DROP A CAR IN KEYSTONE. CHARGES FOR A STAPLETON-KEYSTONE DROP RANGE FROM \$49.95 TO \$69.95. IF YOU WISH FURTHER INFORMATION OR WISH TO MAKE A RESERVATION, CALL ENTERPRISE LEASING AT (303) 320-1121. ALL OTHER MAJOR CAR RENTAL AGENCIES ARE AVAILABLE AT STAPLETON AIRPORT, BUT YOU WOULD HAVE TO PLAN TO KEEP THE CAR FOR THE DURATION OF THE MEETING OR DROP IT IN VAIL, COLORADO, AN HOUR'S DRIVE FROM KEYSTONE. RESERVATIONS ARE ADVISED FOR ALL RENTAL CARS.

### REGISTRATION

REGISTRATION IN THE LOBBY OF KEYSTONE LODGE WILL BE OPEN DURING THE FOLLOWING HOURS: TUESDAY, 14 OCTOBER, 5:00 - 8:00 P.M.; WEDNESDAY, 15 OCTOBER, 7:30 A.M. - 6:00 P.M.; THURSDAY, 16 OCTOBER, 7:30 - 11:30 A.M. PARTICIPANTS ARE URGED TO PREREGISTER, USING THE ATTACHED FORM.

### HOUSING

KEYSTONE RESORT OFFERS A VARIETY OF ACCOMMODATIONS. AT KEYSTONE LODGE A LIMITED NUMBER OF SINGLE AND DOUBLE HOTEL-TYPE ROOMS ARE AVAILABLE. LOFT SUITES (LIVING AREA DOWNSTAIRS, QUEEN-SIZE BED IN LOFT) ARE ALSO AVAILABLE AT THE LODGE. CONDOMINIUMS, WHICH SURROUND THE LODGE, INCLUDE STUDIO, ONE- AND TWO-BEDROOM ACCOMMODATIONS, AND ONE THREE-BEDROOM UNIT. THESE OFFER LIVING ROOMS (MOST WITH FIREPLACES) AND FULL KITCHENS. ALL CONDOMINIUMS ARE WITHIN A VERY SHORT WALK OF THE LODGE.

IF YOU REQUEST A LODGE ROOM AND NONE ARE AVAILABLE, YOU WILL BE ASSIGNED THE NEXT AVAILABLE ACCOMMODATION (STUDIO, ONE-BEDROOM CONDO, ETC.). PLEASE NOTE: KEYSTONE LODGE CANNOT BE RESPONSIBLE FOR PAIRING OF ROOMMATES. YOU MUST FURNISH NAMES OF THOSE WITH WHOM YOU WISH TO SHARE A ROOM OR CONDOMINIUM. YOU ARE URGED TO CONTACT YOUR COLLEAGUES TO ARRANGE TO SHARE A CONDOMINIUM.

### ACTIVITIES

KEYSTONE BOASTS 8 RESTAURANTS AND 24 SHOPS, ALL WITHIN WALKING DISTANCE. RECREATION FACILITIES INCLUDE SWIMMING, HIKING, HORSEBACK RIDING, AND TENNIS (INDOOR AND OUTDOOR). INFORMATION ON RECREATION ACTIVITIES WILL BE AVAILABLE AT THE LODGE. DAYS SHOULD BE SUNNY AND EVENINGS COOL. AASP MEMBERS ARE ENCOURAGED TO BRING THEIR FAMILIES FOR A FALL VACATION IN THE ROCKIES.

### SPECIAL EVENTS

- ICEBREAKER/COCKTAIL PARTY - WEDNESDAY, 15 OCTOBER  
(SNACKS AND CASH BAR)
- BUSINESS LUNCHEON - FRIDAY, 17 OCTOBER  
(EXTRA TICKETS AVAILABLE)
- SIGHTSEEING TRIP - THURSDAY, 16 OCTOBER  
(BUSES TO VAIL, COLORADO)

### TECHNICAL PROGRAM

THE THEME OF THE TECHNICAL PROGRAM AT THE 1980 MEETING WILL BE "BACK TO BASICS IN BIOSTRATIGRAPHY." DR. ERLE KAUFFMAN, U.S. NATIONAL MUSEUM, WILL BE THE KEYNOTE SPEAKER; HIS TOPIC WILL BE "THEORETICAL CONSIDERATIONS IN BIOSTRATIGRAPHY." CONTRIBUTED PAPERS CONCERNING PRINCIPLES AND APPLICATIONS OF BIOSTRATIGRAPHY WILL BE SOUGHT TO FORM A SYMPOSIUM ON THIS SUBJECT.

CONTRIBUTED PAPERS WILL BE GROUPED AROUND THE OTHER TWO INVITED PAPERS TO FORM SPECIAL SESSIONS. FRANK ROYSE, CHEVRON USA, WILL SPEAK ON THE GEOLOGY OF THE IDAHO-UTAH-WYOMING THRUST BELT. PAPERS ON THE PALYNOLOGY OF THIS THRUST BELT AND OTHER STRUCTURALLY COMPLEX TERRAINS WILL BE SOLICITED. DR. WILLIAM EVITT, STANFORD UNIVERSITY, WILL SPEAK ON RESEARCH IN DINOFLAGELLATES. RELATED PAPERS

(CONT'D., P. 2)

WILL BE GROUPED INTO A SPECIAL SESSION ON DINOFLAGELLATES. PAPERS ON ALL ASPECTS OF PALYNOLOGY WILL BE WELCOME. IF THERE IS SUFFICIENT INTEREST, A POSTER SESSION WILL BE ORGANIZED. PLAN NOW TO CONTRIBUTE TO THE 1980 PROGRAM. THE FORMAL CALL FOR PAPERS—ABSTRACTS TO BE SUBMITTED TOGETHER WITH THE TITLES—WILL APPEAR IN THE NEXT ISSUE OF AASP NEWSLETTER.

FIELD TRIP

A POST-MEETING FIELD TRIP WILL BE OFFERED ON SATURDAY, 18 OCTOBER. PARTICIPATION WILL BE LIMITED TO 40 REGISTRANTS. THE BUS WILL DEPART FROM KEYSTONE LODGE AT 8:00 A.M. AND RETURN TO DENVER WITH STOPS ALONG THE WAY. THE FIELD TRIP WILL HIGHLIGHT THE STRUCTURAL GEOLOGY OF THE FRONT RANGE OF THE ROCKY MOUNTAINS; THE MINING HISTORY OF THE REGION WILL ALSO BE DISCUSSED ENROUTE. STOPS WILL PROVIDE AN OPPORTUNITY TO VIEW AND DISCUSS LOWER CRETACEOUS TRACE FOSSILS AND THE UPPER CRETACEOUS-TERTIARY BOUNDARY NEAR GOLDEN, COLORADO. TRANSPORTATION, LUNCH, AND GUIDE BOOK ARE INCLUDED IN THE COST OF THE TRIP. THE BUS WILL RETURN TO STAPLETON INTERNATIONAL AIRPORT BY 5:00 P.M.

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ROCKY MOUNTAIN HIGH—KEYSTONE '80. BE THERE!

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**BULLETIN BOARD**

FIFTH INTERNATIONAL PALYNOLOGICAL CONFERENCE (5. IPC), CAMBRIDGE, ENGLAND, 29 JUNE-6 JULY 1980 (Mrs. G. E. DREWRY, DEPT. GEOLOGY, SEDGWICK MUSEUM, DOWNING ST., CAMBRIDGE CB2 3EQ, U.K.),

SECOND INTERNATIONAL MEETING OF THE ASSOCIATION OF ANGIOSPERM PALEOBOTANISTS, READING, ENGLAND, 7-13 JULY 1980 (P. R. CRANE, DEPT. BOTANY, THE UNIVERSITY, READING, U.K.),

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.),

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

COMMISSION INTERNATIONALE DE MICROFLORE DU PALEOZOIQUE (CIMP), 1982 MEETING, "PALYNOLOGY AT THE NORTH ATLANTIC MARGIN," DUBLIN, IRELAND, SEPTEMBER, 1982 (JOINT MEETING WITH AASP),

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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,

IN FRONT OF THE LAST AASP NEWSLETTER YOU HAD A BIG GREEN PAGE "ANNUAL DUES NOTICE," I READ IT AS "ANNUAL DUES NOTICE," BUT AFTER I HAD GONE TO THE BANK TO GET A MONEY-ORDER, I FOUND THAT ALREADY IN OCTOBER I HAD SENT IN MY 1980 DUES. AND THAT BECAUSE THERE WAS A DUES REMINDER IN THAT NEWSLETTER, TOO. SO, THE LATEST GREEN ONE SHOULD HAVE BEEN READ AS "ANNUAL-DUES NOTICE."

MAY I ASK YOU PLEASE TO ISSUE ONLY ONE ANNUAL DUES REMINDER PER YEAR?

JAN JANSONIUS

DEAR JAN,

SORRY FOR THE CONFUSION. ACTUALLY THE BIG GREEN ONE WAS THE "NEW, IMPROVED DUES NOTICE." WE WILL PUBLISH IT ONLY ONCE A YEAR IN THE FUTURE. IF ONLY EVERY MEMBER WERE SO DILIGENT AND PROMPT ABOUT PAYING DUES AS YOU ARE!

ED.

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SNUGGEDY SWAMP INSPIRES POETRY

AN ARTICLE ON THE SNUGGEDY SWAMP OF SOUTH CAROLINA THAT WAS COAUTHORED BY AASP-MEMBER ART COHEN INSPIRED GEOTIMES COLUMNIST ROBERT BATES TO RHYME. THE RESULTS, FOR BETTER OR VERSE, ARE REPRINTED HERE, WITH PERMISSION. COULD THIS BE THE BEGINNING OF PALYNOPOETRY?

STOMP, STOMP, IN SNUGGEDY SWAMP  
WHERE REDUCING ENVIRONMENTS STAY,  
WHERE WHAT THE TREES LOSE  
FALLS INTO THE OOZE  
AND BACTERIA FROLIC ALL DAY.

NO GLORY OR POMP LIGHTS SNUGGEDY SWAMP  
DOWN BY THE BARRIER BAY,  
FOR LIFE'S REALLY HARSH  
IN THIS MUCKETY MARSH  
WHERE THE MICROBES ARE WORKING AWAY.

OH THE ANAEROBES ROMP IN SNUGGEDY SWAMP  
THE LIGNINS AND WAXES DECAY,  
AND DOWN A FEW FEET  
THEY HAVE TURNED INTO PEAT  
(OR EVEN—AH—EM—INTO THDM\*)  
JUST AS THE RESEARCHERS SAY.

\*TRANSLUCENT HUMIC DEGRADATION MATTER. WHAT ELSE!

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JOHN PENNY RETIRES

PROFESSOR JOHN S. PENNY, FORMERLY OF LA SALLE COLLEGE, HAS RETIRED. HIS MAILING ADDRESS IS NOW: 390 FOLLY ROAD, CHALFONT, PA 18914.

ROGER PHILIP WODEHOUSE  
9 DECEMBER 1889 - 30 JULY 1978

PROFESSOR JOSEPH EWAN, IN THE "CALENDAR OF EVENTS" IN HIS SHORT HISTORY OF BOTANY IN THE UNITED STATES PUBLISHED IN 1969 FOR THE XI INTERNATIONAL BOTANICAL CONGRESS, QUITE APPROPRIATELY CITES THE PUBLICATION OF WODEHOUSE'S BEAUTIFULLY ILLUSTRATED "POLLEN GRAINS" AS ONE OF SEVEN SIGNIFICANT EVENTS FOR THE YEAR 1935. THIS LAND-MARK VOLUME WAS THE FIRST MODERN, ESSENTIALLY COMPREHENSIVE, DISCUSSION OF "POLLEN GRAINS—THEIR STRUCTURE AND SIGNIFICANCE IN SCIENCE AND MEDICINE" AND HAS SERVED, REMARKABLY FOR DECADES, AS A VALUED, STILL MUCH CITED, REFERENCE WORK IN A WIDE ARRAY OF PALYNOLOGICAL RESEARCHES. HIS PROFESSIONALLY VERSATILE CAREER ENDED WITH HIS DEATH AT AGE 89 ON 30 JULY 1978.

DR. WODEHOUSE WAS BORN ON 9 DECEMBER 1889 IN TORONTO, CANADA. AFTER COMPLETING HIS A.M. DEGREE AT HARVARD UNIVERSITY HE MOVED TO COLUMBIA UNIVERSITY WHERE HE RECEIVED HIS PH.D. IN BOTANY IN 1928. FOR CA. 40 YEARS HE ADMINISTERED THE HAYFEVER AND ALLERGY LABORATORIES OF THE ARLINGTON CHEMICAL COMPANY AND THE LEDERLE LABORATORIES DIVISION OF THE AMERICAN CYANAMID COMPANY.

HIS RESEARCH PUBLICATIONS COVER AN IMPRESSIVE ARRAY OF PALYNOLOGICAL FIELDS INCLUDING VARIOUS PIONEERING STUDIES OF ATMOSPHERIC POLLEN IN RELATION TO HAYFEVER (POLLINOSIS), MORPHOLOGICAL INVESTIGATIONS OF POLLEN WITH REFERENCE TO BASIC PHYLOGENY, AND RESEARCHES ON POLLEN OF THE GREEN RIVER OIL SHALES. WODEHOUSE'S WIDE RANGE OF INVESTIGATIONS SUGGESTS THE REASON FOR, AND THE VALUE OF, THE BROAD TERM "PALYNOLOGY" PROPOSED BY HYDE AND WILLIAMS IN 1944 TO COVER THE MANY PHASES OF POLLEN-SPORE RESEARCH.

IN 1945 WODEHOUSE PUBLISHED THE STILL USEFUL "HAYFEVER PLANTS" IN WHICH HE INTERPRETED THE BOTANY OF HAYFEVER IN TERMS OF CLINICAL SIGNIFICANCE. VALUABLE FEATURES OF THIS WORK ARE THE CONCISE DESCRIPTIONS OF TAXA COMMONLY INVOLVED IN POLLEN ALLERGY TOGETHER WITH A GEOGRAPHICAL SURVEY OF THE HAYFEVER REGIONS OF NORTH AMERICA.

POLLEN GRAIN FORM IN TERMS OF DEVELOPMENT, DETAILED STRUCTURE, AND FUNCTION CONTINUES, TODAY, TO BE A MATERIAL OF ACTIVE RESEARCH INTEREST. ONE SHOULD NOT OVERLOOK DR. WODEHOUSE'S UNIQUE CONCERN FOR THE ORIGIN OF POLLEN CHARACTERS WHICH RELATES, IN PART, TO HIS STIMULATING ASSOCIATION WITH R. A. HARPER, WHO HIMSELF WAS INTERESTED IN THE FACTORS THAT DETERMINE THE FORM OF CELLS. STILL NOT FULLY APPRECIATED, BUT STILL SIGNIFICANTLY PROVOCATIVE, ARE SUCH TERMS PROPOSED BY WODEHOUSE AS "HARMOMEGATHY," "HAPTOTYPIC," AND "EMPHYTIC." THE POLLEN STRUCTURES AND PHENOMENA TO WHICH THESE TERMS REFER CANNOT BE IGNORED IN CURRENT INVESTIGATIONS OF POLLEN AND SPORES IN TERMS OF STRUCTURE AND FUNCTION IN THE TOTAL BIOTIC COMMUNITY.

IT WAS A PLEASURE TO LEARN FROM MRS. WODEHOUSE THAT DR. WODEHOUSE REMAINED ACTIVE UP TO THE TIME OF HIS DEATH, HIS LATEST PROJECT BEING THE PRODUCTION OF WATER COLOR ILLUSTRATIONS OF THE PLANTS OF SOUTHERN FLORIDA FOR A PROPOSED, READILY COMPREHENSIBLE HANDBOOK OF PLANT FAMILIES.

SURELY IT SEEMS APPROPRIATE THAT PROFESSOR GUNNAR ERDTMAN

IN HIS MORE RECENT COMPREHENSIVE WORK ON "POLLEN MORPHOLOGY AND PLANT TAXONOMY" INCLUDED DR. WODEHOUSE, ALONG WITH I. W. BAILEY AND C. SKOTTSBERG, IN HIS DEDICATORY TRIBUTE IN THE FOREWORD OF HIS WIDELY DISTRIBUTED BOOK,

A. O. DAHL

(REPRINTED WITH PERMISSION FROM  
INTERNATIONAL AEROBIOLOGY NEWSLETTER)

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#### NAPC-III

THE THIRD NORTH AMERICAN PALEONTOLOGICAL CONVENTION (NAPC-III) WILL CONVENE IN MONTREAL, CANADA, IN AUGUST OF 1982. PRESENTATION OF PAPERS AND MEETINGS OF SYMPOSIA ARE SCHEDULED TO TAKE PLACE ON 5-7 AUGUST AND THE FOLLOWING FOUR DAYS HAVE BEEN RESERVED FOR FIELD TRIPS (8-11 AUGUST).

INDIVIDUALS OR GROUPS WHO WISH TO PROPOSE SYMPOSIA OR FIELD TRIPS SHOULD SEND DETAILS TO THE CONVENORS, COLIN STEARN AND BERNARD MAMET, AT: DEPT. GEOLOGICAL SCIENCES, MCGILL UNIVERSITY, 3450 UNIVERSITY ST., MONTREAL H3A 2A7, QUEBEC.

IT IS ANTICIPATED THAT INDIVIDUAL CONTRIBUTIONS NOT ORGANIZED INTO SYMPOSIA WILL BE ACCEPTED. THE ORGANIZING COMMITTEE IS CONSIDERING THE FORM OF PUBLICATION THAT MAY RESULT FROM THE MEETINGS. FUTURE ANNOUNCEMENTS WILL INCLUDE DETAILS OF HOW CONTRIBUTIONS SHOULD BE SUBMITTED AND DEADLINES FOR SUBMISSION.

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#### AASP FOUNDATION CONTRIBUTIONS

YOUR TAX-DEDUCTIBLE CONTRIBUTION TO THE AASP FOUNDATION WILL HELP TO SUPPORT AASP'S PUBLICATIONS PROGRAM. CONTRIBUTIONS IN ANY AMOUNT WILL BE ACCEPTED. WRITE TO: R. T. CLARKE, AASP FOUNDATION, MOBIL R. & D. CORP., P. O. BOX 900, DALLAS, TX 75221.

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#### CHITINOZOAN NEWSLETTER

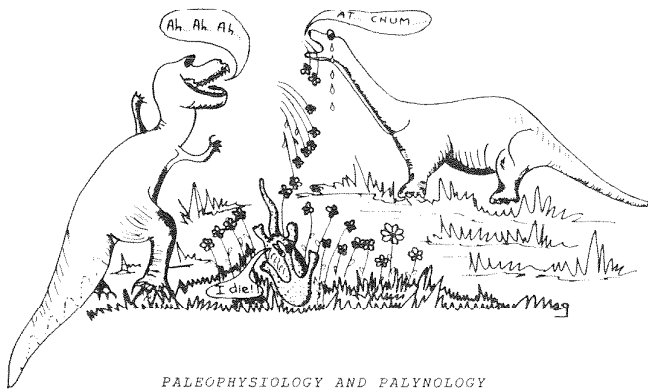
THE CHITINOZOAN NEWSLETTER, EDITED BY SVEN LAUFELD AND YNGVE GRAHN, IS BEING PUBLISHED BY THE COMMISSION INTERNATIONALE DE MICROFLORE DU PALEOZOIQUE (CIMP). THE NEWSLETTER IS INTENDED TO BE A MEANS OF COMMUNICATION FOR MEMBERS OF THE CIMP SUBCOMMISSION ON CHITINOZOA. IT IS BEING DISTRIBUTED FREE OF CHARGE TO ALL ACTIVE WORKERS ON CHITINOZOANS AND TO OTHER PERSONS, LIBRARIES, AND INSTITUTIONS. WRITE TO: YNGVE GRAHN, GEOLOGICAL SURVEY OF SWEDEN, BOX 670, S-751 28 UPPSALA, SWEDEN.

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ROCKY MOUNTAIN HIGH—KEYSTONE '80. BE THERE!

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POSITIONS AVAILABLE



DINOS REVISITED

MANY AASP MEMBERS WERE ALREADY INTERESTED IN DINOS (= DINOFLAGELLATES), BUT AFTER THE DALLAS MEETING FIELD TRIP A WIDER INTEREST IN DINOS (= DINOSAURS) SEEMS TO HAVE BEEN AWAKENED.

CLAUDE CARATINI SUBMITTED THE CARTOON TO ILLUSTRATE HIS THEORY ON THE RELATION OF "PALEOPHYSIOLOGY AND PALYNOLOGY." HE EXPLAINS THAT THE CRETACEOUS COINCIDENCE OF ANGIOSPERM ORIGINS AND ARCHOSAURIAN EXTINCTIONS MUST BE EVIDENCE OF PALEOPOLLINOSIS. HIS ILLUSTRATION GRAPHICALLY PORTRAYS THE AGONIES OF THE DINOS AS THEY SUCCUMBED TO LETHAL HAY FEVER. THE CONNECTION BETWEEN THIS THEORY AND THE GLEN ROSE TRACE FOSSILS (WHICH DR. CARATINI SAYS WERE HIS INSPIRATION) MUST BE THAT THE DINOS WERE "MAKING TRACKS" TO GET AWAY FROM THE POLLEN.

DEWEY MCLEAN, WHO ALREADY HAD A REPUTATION FOR HIS RESEARCH WITH MICROSCOPIC DINOS HAS BEEN MAKING NEWS WITH HIS THEORIES ON THE MEGASCOPIC DINOS. HIS THEORY IS A CO<sub>2</sub> - GREENHOUSE - CLIMATE-WARMING - DINO-DYING "LINK" THEORY (SEE FOCUS IN THIS ISSUE OF THE NEWSLETTER). AND THERE ARE OTHER THEORIES BESIDES THESE.

SATISH SRIVASTAVA, IN A RECENT PUBLICATION ON CRETACEOUS PALYNOLOGY, SUGGESTED A DIFFERENT EXPLANATION FOR THE CRETACEOUS CASHING-IN-OF-CHIPS. AN ANONYMOUS "CONCERNED READER" OF THIS NEWSLETTER STUDIED HIS SUGGESTION THAT THE MEGADINOS BECAME EXTINCT BECAUSE OF ALKALOID POISONING DUE TO EATING LATE CRETACEOUS ANGIOSPERMS—DYING IN GREAT PAIN AS SUGGESTED BY THEIR TWISTED FOSSIL REMAINS. THE READER OFFERS YET ANOTHER ALTERNATIVE THEORY: THE BIG BEASTS SIMPLY GAVE UP THEIR LOSING COMPETITION WITH MAMMALS AND TURNED TO MIND-EXPANDING SUBSTANCES, THE MAESTRICHTIAN EQUIVALENTS OF Mescaline FROM PEYOTE (*LOPHOPHORA WILLIAMSII*, CACTACEAE) OR THE ALKALOIDS IN JIMSONWEED (*DATURA STRAMONIUM*, SOLANACEAE). IN THE STYLE OF TIMOTHY LEARY (SAYS THE READER) THE DINOSAURS JUST DECIDED TO "TUNE IN, TURN ON, AND DROP OUT!"

RESEARCH SCIENTIST—PALYNOLOGY (319-299-003). SALARY: \$17,660 TO \$42,283 (DEPENDENT ON EXPERIENCE). REF. No. 79-RES-37 (PLEASE QUOTE REFERENCE NUMBER AT ALL TIMES). ENERGY, MINES AND RESOURCES, GEOLOGICAL SURVEY OF CANADA, DARTMOUTH, NOVA SCOTIA. DUTIES: THE ATLANTIC GEOSCIENCE CENTRE IS SEEKING AN EXPERIENCED SCIENTIST TO CONDUCT INDEPENDENT AND TEAM RESEARCH ON SPORES, POLLEN, ACROTARCHS AND DINOFLAGELLATES FROM THE MESOZOIC AND CENOZOIC ROCKS OF THE EASTERN CANADIAN OFFSHORE REGION. THE INCUMBENT WILL REFINE THE BIOSTRATIGRAPHIC AND CHRONOSTRATIGRAPHIC FRAMEWORK, WILL CONSTRUCT PALEOCLIMATIC AND PALEOECOLOGIC CONDITIONS, AND WILL DETERMINE SOURCE ROCK POTENTIAL FROM THE TYPE AND COLORATION OF DISPERSED ORGANIC MATTER IN SEDIMENTS. QUALIFICATIONS: APPLICANTS MUST POSSESS A DOCTORATE DEGREE, OR A LESSER DEGREE WITH EVIDENCE OF RESEARCH EXPERIENCE AND PRODUCTIVITY EQUIVALENT TO A DOCTORATE, PLUS SEVERAL YEARS EXPERIENCE AS A PALYNOLOGIST. THE INCUMBENT MUST BE THOROUGHLY FAMILIAR WITH MESOZOIC AND CENOZOIC BIOSTRATIGRAPHIC ZONATIONS BASED ON PALYNOLOGY AND MUST BE KNOWLEDGEABLE IN SUBSURFACE MAPPING TECHNIQUES. LANGUAGE REQUIREMENTS: KNOWLEDGE OF ENGLISH IS ESSENTIAL. SEND YOUR APPLICATION FORM AND (OR) RESUME TO: D. E. FRASER, NATIONAL CAPITAL REGION STAFFING OFFICE, PUBLIC SERVICE COMMISSION OF CANADA, 16TH FLOOR L'ESPLANADE LAURIER, OTTAWA, ONTARIO K1A 0M7.

A CHALLENGING GEOLOGY-VITRINITE REFLECTANCE POSITION IS AVAILABLE WITH AMOCO IN DENVER. APPLICANTS SHOULD HAVE A WORKING KNOWLEDGE OF VITRINITE REFLECTANCE STUDY, BASIC PALYNOLOGIC TRAINING, A STRONG GEOLOGIC BACKGROUND, AND A DESIRE TO INTEGRATE VITRINITE REFLECTANCE DATA WITH GEOLOGIC PETROLEUM EXPLORATION CONCEPTS. INTERESTED PERSONS MAY APPLY TO: J. W. PARKS, REGIONAL PALEONTOLOGIST, AMOCO PRODUCTION CO., SECURITY LIFE BUILDING, DENVER, CO 80202.

AMOCO PRODUCTION COMPANY WILL HAVE AN OPENING IN DENVER FOR A PALYNOLOGIST TO WORK THE TERTIARY OF THE ROCKY MOUNTAINS. U.S. CITIZENS HAVING 2-5 YEARS TERTIARY PALYNOLOGY EXPERIENCE AND A GEOLOGICAL BACKGROUND ARE PREFERRED. SEND RESUMES TO: J. W. PARKS, REGIONAL PALEONTOLOGIST, AMOCO PRODUCTION CO., 1913 SECURITY LIFE BUILDING, DENVER, CO 80202.

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**PALYNOLITERATURE**

THE PUBLICATIONS REVIEWED IN THIS ISSUE OF AASP NEWSLETTER ARE AVAILABLE FROM THE ADDRESSES LISTED BELOW.

GSC PAPER 78-24: GEOLOGICAL SURVEY OF CANADA, 601 BOOTH ST., OTTAWA K1A 0E8 (\$3.00 IN CANADA, \$3.60 ELSEWHERE).

PLANT FOSSILS OF WEST VIRGINIA: WEST VIRGINIA GEOLOGICAL AND ECONOMIC SURVEY, P.O. BOX 879, MORGANTOWN, WV 26505 (\$3.00).

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# FOCUS

NORTH TEXAS STATE UNIVERSITY

THIS SUMMER'S FIELD WORK RESULTED IN POLLEN SAMPLES FROM A NUMBER OF PLEISTOCENE VERTEBRATE LOCALITIES THAT FOR A LONG TIME HAVE BEEN ON MY LIST OF PLACES TO VISIT. SAMPLES WERE COLLECTED FROM THE BAR M 2 (OKLAHOMA) AND SLATON (TEXAS) LOCAL FAUNAS AND THE BLANCAN TYPE SECTION IN CROSBY COUNTY, TEXAS. WALTER DALQUEST (MIDWESTERN UNIVERSITY) GUIDED ME TO THE HARDEMAN TERRACE, GOOD CREEK, AND VERA (PEARLETTE TYPE 0) LOCALITIES IN NORTH TEXAS AND PROVIDED MATERIAL FROM THE TYPE HEMPHILLIAN BEDS FOR POLLEN ANALYSIS. GERRY SCHULTZ (WEST TEXAS STATE UNIVERSITY) AND I COLLECTED SAMPLES FROM THE TYPE CLARENDONIAN BEDS IN THE TEXAS PANHANDLE AND THE LAVERNE FORMATION (PLIOCENE), INCLUDING THE LEAF AND DIATOMITE LOCALITY IN BEAVER COUNTY, OKLAHOMA, REPORTED BY CHANEY AND ELIAS IN 1936. I ALSO DUPLICATED THE POLLEN SECTIONS OF OLDFIELD AND SCHOENWETTER AT WHITE LAKE AND ILLUSION IN WEST TEXAS IN A FIRST STEP TO REINVESTIGATE THE TAHOKA PLUVIAL.

POLLEN STUDIES FROM SEVERAL LONG-TERM OKLAHOMA AND TEXAS SALVAGE ARCHEOLOGY PROJECTS ARE NEARLY COMPLETED. THE POLLEN ANALYTICAL RESULTS OF TWO OKLAHOMA PROJECTS ARE REPORTED IN JOUR. OF FIELD ARCHAEOLOGY (V. 5, P. 269-287, 1978) AND PLAINS ANTHROPOLOGIST (V. 24, P. 207-238, 1979). THE GENERAL POLLEN-BASED PALEOENVIRONMENTAL RECORD WAS PRESENTED AT THE GEOLOGICAL SOCIETY OF AMERICA SOUTH-CENTRAL SECTION MEETING IN MOUNTAIN VIEW, ARKANSAS, IN APRIL (ABS. WITH PROGRAMS, V. 11, NO. 2, P. 14, 1979). POLLEN WORK FROM THESE ROCKSHELTER AND CAVE SITES HAS BEEN PLAGUED BY POOR PRESERVATION. GRAIN DETERIORATION INCREASES STRONGLY WITH DEPTH AT EACH SITE.

IN AUGUST I PRESENTED A PAPER, "HOLOCENE ELEVATION SHIFTS OF SOUTHWESTERN PINE FORESTS: THE POLLEN RECORD" AT A SYMPOSIUM ORGANIZED BY PAUL DELCOURT (UNIVERSITY OF TENNESSEE) AT THE ECOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING IN STILLWATER, OKLAHOMA, AND WAS A DISCUSSANT AT THE 52ND ANNUAL PECOS CONFERENCE AT TUCSON, ARIZONA, IN A SYMPOSIUM ON "ENVIRONMENTAL AND CULTURAL CHANGE ON THE COLORADO PLATEAUS."

STEPHEN A. HALL

## VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

PALYNOLOGICAL RESEARCH AT VPI & SU HAS FOCUSED PRIMARILY UPON TAXONOMY AND BIOSTRATIGRAPHY OF CRETACEOUS AND TERTIARY DINOFLAGELLATES, ON THE ATLANTIC COASTAL PLAIN FROM NEW JERSEY TO SOUTH CAROLINA AND ON THE GULF COASTAL PLAIN IN ALABAMA, IN WHICH WE ARE LAYING FOUNDATIONS FOR STUDIES OF DINOFLAGELLATE PALEOECOLOGY AND EVOLUTION. TWO PH.D. DISSERTATIONS (MAY AND WHITNEY) AND FIVE M.S. THESES (BENSON, FORD, GOODMAN, WATKINS, AND WITMER) HAVE BEEN COMPLETED, AND TWO MORE (WITMER, PH.D., AND ROBERTS, M.S.) SHOULD BE COMPLETED BY JUNE, 1980; TWO M.S. THESES IN PROGRESS ON WORK IN ALABAMA (JAHNKE AND ROUNDS) SHOULD BE COMPLETED BY THE END OF 1980. PARTS OF VARIOUS OF THESE WORKS HAVE BEEN PUBLISHED, AND MORE WILL BE FORTHCOMING.

IN ADDITION, I AM INVOLVED IN OTHER RESEARCH PROJECTS THAT ARE ROOTED CONCEPTUALLY IN PALEOBOTANY AND PALYNOLOGY. I AM INVESTIGATING THE ROLE OF GLOBAL WARMING IN EVOLUTION AND HAVE DEVELOPED PHYSIOLOGY-CLIMATE LINK THEORIES FOR THE LATE CRETACEOUS REPTILIAN EXTINCTIONS (SCIENCE, V. 201, 1978) AND THE LATE PLEISTOCENE MAMMALIAN EXTINCTIONS (GEOLOGICAL SOCIETY OF AMERICA ABS., AND MS., IN PRESS). AM EXTENDING MY "LINK" THEORY TO OTHER CENOZOIC MAMMALIAN EXTINCTIONS AS PART OF MY DEVELOPMENT OF A NEW ASPECT OF PALEONTOLOGY, "PALEOTHERMOBIOLOGY." I AM INVESTIGATING POSSIBLE IMPACT ON MAMMALIAN REPRODUCTION OF THE 6 DEGREE FOSSIL FUEL CO<sub>2</sub> INDUCED "GREENHOUSE" CONDITIONS POSTULATED FOR THE NEXT TWO CENTURIES BY THE NATIONAL ACADEMY OF SCIENCES.

ADDITIONALLY, I AM INVESTIGATING THE STABLE ISOTOPE AND PALEOBOTANICAL PALEOTEMPERATURE RECORDS TO FURTHER DEVELOP MY EUSTASY-CLIMATE LINK THEORY (SCIENCE, V. 200, 1978), AM RECONCILING THE TERMINAL CRETACEOUS STABLE ISOTOPE AND PALEOBOTANICAL RECORDS (MS., IN PREPARATION), HAVE DEVELOPED THE TRIPARTITE "SIGNATURE" THAT A NEAR SOLAR-NEIGHBORHOOD SUPERNOVA EVENT WOULD IMPRINT UPON THE EARTH (MS., IN PRESS), AND AM EXPLORING HERETOFORE UNEXPLORED EVOLUTIONARY ASPECTS OF SOLAR PROTON-PHYSIOLOGY LINKS.

Dewey M. McLean

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### ABOUT "FOCUS"

WITH THIS ISSUE AASP NEWSLETTER INTRODUCES FOCUS, IN WHICH NEWS ABOUT PALYNOLOGICAL ACTIVITIES AT VARIOUS UNIVERSITIES AND LABORATORIES IN NORTH AMERICA WILL BE PUBLISHED. THE COLUMN WILL DEPEND UPON CONTRIBUTIONS OF INFORMATION FROM AASP MEMBERS. IF YOU WOULD LIKE TO SEE YOUR ORGANIZATION AND ITS STAFF PROFILED, SEND A BRIEF REPORT ON RESEARCH IN PROGRESS, THESES NEARING COMPLETION, AND PLANS TO YOUR NEWSLETTER EDITOR. ITEMS WILL BE PUBLISHED IN FOCUS IN THE ORDER IN WHICH THEY ARE RECEIVED.

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### POSITIONS WANTED

S. M. RASUL IS SEEKING A POSITION AS PALYNOLOGIST. HIS QUALIFICATIONS INCLUDE AN M.Sc. IN GEOLOGY (BIRMINGHAM) AND A Ph.D. IN GEOLOGY (SHEFFIELD). HIS SPECIALTY AREA IS CAMBRO-ORDOVICIAN PALYNOFORMS (7 YEARS EXPERIENCE) AND HE HAS SOME EXPERIENCE WITH TERTIARY PALYNOFORMS. RESUME, LIST OF PUBLICATIONS, AND LIST OF REFERENCES WILL BE SENT UPON REQUEST. WRITE TO: S. M. RASUL, DEPT. GEOLOGY, UNIV. LONDON, KING'S COLLEGE, STRAND, LONDON WC2R 2LS, ENGLAND, OR CALL 01-836-5454 EXT. 2515.

ANTHONY AFEJUKU IS SEEKING A POSITION AS PALYNOLOGIST IN INDUSTRY. HE HOLDS A Ph.D. DEGREE AND HAS EXPERIENCE IN STRATIGRAPHIC PALYNOLOGY, NANNOFOSSILS, VITRINITE REFLECTANCE, SEISMIC STRATIGRAPHY, AND ENVIRONMENTAL REGULATORY PROCEDURES. WRITE TO: ANTHONY AFEJUKU, 7449 ONION CREEK DRIVE, AUSTIN, TX 78744, OR CALL (512) 475-6902.

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## REVIEWS

PALYNOLOGICAL ZONATION AND CORRELATION OF SIXTY-SEVEN WELLS, EASTERN CANADA, by M. S. BARSS, J. P. BUJAK, AND G. L. WILLIAMS; GEOLOGICAL SURVEY OF CANADA PAPER 78-24; 1979, 100 p., 9 FIGS., 2 TABLES, \$3.00 (CANADA), \$3.60 (OTHERS)

THE AUTHORS COMPILED PALYNOLOGICAL DATA FROM 67 WELLS DRILLED FOR THE EXPLORATION OF HYDROCARBONS IN EASTERN CANADA DURING THE 1966-1978 PERIOD. THE WELLS INCLUDED IN THIS REPORT COVER OVER 2,000 MILES (3,200 KILOMETERS) OF COASTAL EASTERN CANADA BETWEEN 42 DEGREES AND 59 DEGREES NORTH LATITUDE EXTENDING FROM THE SCOTIAN SHELF TO THE LABORADOR SHELF THROUGH THE GRAND BANKS. THE DATA COLLECTED IN THIS PAPER RANGE FROM DEVONIAN TO PLEISTOCENE SEDIMENTS.

THE PALYNOLOGICAL ZONATION RECOGNIZED IN ALL WELLS IS SHOWN IN A COMPOSITE TABLE OF THE GEOLOGICAL TIME SCALE. THIS TABLE INCLUDES 6 INFORMAL SUBZONES ALSO. HOWEVER, INFORMAL ZONATION OF THE LABORADOR SHELF IS GIVEN SEPARATELY IN ANOTHER TABLE.

THE PAPER CONSISTS OF FOUR MAJOR SECTIONS BASED ON FOUR GEOGRAPHICAL AREAS: GULF OF ST. LAWRENCE, SCOTIAN SHELF, GRAND BANKS, AND LABORADOR SHELF. EACH SECTION IS PROVIDED WITH A WELL-LOCATION MAP, A FIGURE SHOWING THE AGES OF SEDIMENTS IN EACH WELL BASED ON PALYNOLOGICAL DATA, AND REPORTS FOR EACH WELL ALPHABETICALLY ARRANGED WITHIN A SECTION. THE REPORTS OF INDIVIDUAL WELLS CONSIST OF THE LOCALITY AND DRILLING INFORMATION, NATURE AND NUMBER OF SAMPLES, PALYNOSTRATIGRAPHIC SUBDIVISIONS, THE AGES AND DEPTHS OF ZONES, AND A LIST OF BIOSTRATIGRAPHICALLY SIGNIFICANT SPECIES.

THE SAMPLES STUDIED WERE MOSTLY COMPOSITE CUTTINGS SAMPLES OF 30 FT. (10 M) THICKNESS APPROXIMATELY AT EVERY 100 FT. (30 M) INTERVAL. ZONES ARE RECOGNIZED BY THE HIGHEST OCCURRENCE OF A SPECIES. THE HIGHEST OCCURRING SPECIES IN AN INDIVIDUAL ZONE ARE LISTED UNDER "SELECTED PALYNOMORPHS" WITHIN EACH REPORT. THE AUTHORS OF FORMAL TAXA ARE NOT CITED IN THE TEXT BUT ARE GIVEN AT THE END IN THE RESPECTIVE ONE OF THREE APPENDICES, VIZ., SPORES AND POLLEN, DINOFLAGELLATES, AND ACRITARCHS AND OTHERS. ONLY PREVIOUSLY ILLUSTRATED INFORMAL TAXA ARE INCLUDED IN THE TEXT AND THEIR REFERENCES ARE GIVEN IN THE TEXT AS WELL AS IN THE APPENDICES.

OCCASSIONALLY ADDITIONAL INFORMATION ABOUT THE EARLIEST OCCURRENCE OF SPECIES OR PALEOENVIRONMENT IS GIVEN (E.G., P. 13, COLUMN 1, LAST PARAGRAPH) ON THE BASIS OF THE EXAMINATION OF SIDEWALL CORES AND CONVENTIONAL CORES. CONTAMINATION OF CORE SAMPLES FROM PALYNOMORPHS WITHIN THE WELL AND FROM THOSE IN THE DRILLING MUD HAS ALSO BEEN NOTED (E.G., P. 4, COLUMN 2, SECOND PARAGRAPH FROM THE BOTTOM).

THE AUTHORS HAVE PROVIDED AN IMMENSE AMOUNT OF DATA, ALTHOUGH PALYNOLOGISTS MAY BE DISAPPOINTED IN NOT FINDING ANY PALYNOMORPH ILLUSTRATIONS. HOWEVER, ILLUSTRATION OF EVEN A MOST SELECTIVE LIST OF TAXA WOULD HAVE RAISED THE PRICE OF THE PAPER TO A PROHIBITIVE LEVEL.

PALYNOSTRATIGRAPHERS WILL HAVE TO BE AWARE OF THE SYNONYMY OF TAXA BEFORE ACCEPTING THEIR RANGES GIVEN HERE. ONE CAN FIND OUT THE FORMAL NAMES OF TAXA WITH AUTHOR CITATIONS IN THE APPENDICES AND THEN REFER TO THE RELEVANT PUBLICATIONS. HOWEVER, IT MAY BE A DIFFICULT TASK DUE TO THE LACK OF PUBLICATION DATES, PARTICULARLY IN CASES OF MULTIPLE PUBLICATIONS OF AN AUTHOR OR A SPECIES CREATED BY AN AUTHOR IN A REFERENCE UNDER OTHER AUTHORS. FOR EXAMPLE, CALLAIOSPHAERIDIUM ASYMMETRICUM (DEFLANDRE & COURTEVILLE) DAVEY & WILLIAMS (SEE DINOFLAGELLATE APPENDIX, P. 111) DOES NOT INDICATE THAT THIS SPECIES IS IN DAVEY, DOWNIE, SARJEANT AND WILLIAMS OF 1966.

MOST OF THE IDENTIFICATIONS OF TAXA AND THEIR RANGES SHOULD BE ACCURATE SINCE ALL THREE AUTHORS OF THIS PAPER HAVE PUBLISHED EXTENSIVELY AND ESTABLISHED A HIGH DEGREE OF CREDIBILITY FOR THEIR JUDGEMENTS. STILL, READERS SHOULD EXERCISE THEIR OWN DISCRETION IN ACCEPTING THE RESULTS. THE PRINTING IS ALMOST WITHOUT ERRORS ALTHOUGH THE THIN, CLOSE PRINT MAY BE DIFFICULT TO READ. APPLICABLE DATA CAN NOT BE FOUND READILY. SINCE ZONES ARE BASED ON THE FIRST OCCURRENCES OF CERTAIN SPECIES AND THOSE SPECIES ARE LISTED UNDER THEIR ZONES IN RESPECTIVE REPORTS, ONE HAS TO GO THROUGH ALL THE PAGES TO FIND OUT A PARTICULAR SPECIES OCCURRENCE.

A LIST OF TAXA COMMON FOR INDIVIDUAL ZONES OF ALL THE WELLS IN ONE AREA WOULD HAVE BEEN VERY USEFUL. IT SEEMS THAT, APART FROM THE SPECIES ON WHICH A ZONE IS NAMED, OTHER SPECIES ARE NOT USUALLY COMMON IN ALL THE WELLS. FOR EXAMPLE, ONLY ONE SPECIES—ODONTOCHITINA PORIFERA—IS COMMON IN THE CORDOSPHAERIDIUM TRUNCIGERUM ZONE (SANTONIAN) OF SHELL PRIMROSE WELL A-41 AND 1A-A-41 (SEE P. 38-39), ALTHOUGH THESE TWO WELLS ARE NEAREST TO EACH OTHER IN THE REGION. ONE MAY NOTE SUCH MINOR OVERSIGHTS AS CORDOSPHAERIDIUM TRUNCIGERUM ZONE BEING PRINTED AS HYSTRICHOSPHAERIDIUM TRUNCIGERUM ZONE ON P. 38.

THE INFORMATION GIVEN AT THE END (P. 98-101) FOR THE AGES OF VARIOUS FORMATIONS PROPOSED IN THESE WELLS WILL BE USEFUL LOCALLY AS WELL AS INTERNATIONALLY. THE DATA SHOULD BE PARTICULARLY INTERESTING FOR PALYNOLOGISTS WORKING ON SHELF AND COASTAL AREAS OF WESTERN EUROPE ACROSS THE ATLANTIC, ALTHOUGH IT IS A UNIVERSALLY SIGNIFICANT CONTRIBUTION IN BIOSTRATIGRAPHY.

SATISH K. SRIVASTAVA

PLANT FOSSILS OF WEST VIRGINIA, by WILLIAM H. GILLESPIE, JOHN A. CLENDENING, AND HERMAN W. PFEFFERKORN; WEST VIRGINIA GEOLOGICAL AND ECONOMIC SURVEY, EDUCATIONAL SERIES ED-3A; 1978, 172 P., 64 PLS., 20 FIGS., \$3.00

THIS BOOK HAS EVOLVED FROM TWO EARLIER VERSIONS OF POPULAR FIELD GUIDES TO THE FOSSIL PLANTS OF WEST VIRGINIA PUBLISHED IN 1960 AND 1966. EDITIONS OF THESE EARLIER BOOKS WERE SOLD OUT OF STOCK AND BECAUSE OF POPULAR DEMAND GILLESPIE AND PFEFFERKORN UNDERTOOK THE REVISION. THIS HANDBOOK OF FOSSIL PLANTS IS WRITTEN FOR THE GENERAL PUBLIC INCLUDING SUFFICIENT DETAIL SO THAT MOST PALEOBOTANISTS WILL FIND IT A USEFUL VOLUME IN THEIR PERSONAL LIBRARY.

(CONTINUED FROM P. 6)

# NEW MEMBERS

WHEN PALEOBOTANISTS ARE ASKED BY PEOPLE INTERESTED IN FOSSIL PLANTS FOR AN INTRODUCTORY HANDBOOK ILLUSTRATING AND DISCUSSING THE FOSSILS LIKELY TO BE FOUND IN AREAS WHERE PENNSYLVANIAN AGE PLANTS ARE COMMON, THIS SHOULD BE ONE OF THE FIRST HANDBOOKS THEY RECOMMEND.

THE RANGE OF TOPICS PRESENTED IN THIS HANDBOOK IS BROAD, COVERING SUCH GENERAL AREAS AS KINDS OF FOSSILIZATION, CLASSIFICATION OF PLANTS, GEOLOGIC TIME, PLATE TECTONICS, FORMATION OF COAL, AND TECHNIQUES FOR COLLECTORS. OTHER AREAS COVERED IN THE BOOK ARE MORE SPECIFICALLY RELATED TO WEST VIRGINIA, SUCH AS THE HISTORY OF PALEOBOTANY AND THE DISCUSSION OF FOSSIL PLANTS THROUGH TIME, INCLUDING MEGAFOSSILS AND MICROFOSSILS. A VERY THOROUGH DISCUSSION IS GIVEN AND OVER 60 FULL-PAGE PLATES ILLUSTRATE COMMON FOSSIL PLANTS OF WEST VIRGINIA. BECAUSE OF THE GEOLOGY OF WEST VIRGINIA THE FOSSIL PLANTS OF THE PENNSYLVANIAN DOMINATE THE BOOK. NEARLY 40 PLATES AND 10 FIGURES ARE DEVOTED TO PHOTOGRAPHS, DETAILED LINE DIAGRAMS, AND RECONSTRUCTIONS OF THE CLASSICAL PENNSYLVANIAN FLORA TYPICAL OF THIS AGE IN EASTERN NORTH AMERICA AND EUROPE. THERE ARE SEVERAL NEWLY DRAWN RECONSTRUCTIONS BY JERRY JENKINS IN THIS VOLUME.

THIS HANDBOOK OF FOSSIL PLANTS IS ONE OF THE FINEST AND AT \$3.00 CERTAINLY THE LEAST EXPENSIVE BOOK I KNOW OF FOR GENERAL IDENTIFICATION OF PENNSYLVANIAN AGE PLANT REMAINS. I RECOMMEND IT FOR PROFESSIONAL PALEOBOTANISTS, INTERESTED STUDENTS, AND AMATEURS AS A USEFUL RESOURCE BOOK.

DAVID DILCHER

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## BOOKS RECEIVED FOR REVIEW

THE FOLLOWING ISSUES OF BIOLOGICAL MEMOIRS (INTERNATIONAL PUBLISHERS, LUCKNOW, INDIA) HAVE BEEN RECEIVED FOR REVIEW. IF YOU WOULD LIKE TO REVIEW ONE FOR AASP NEWSLETTER, WRITE TO YOUR NEWSLETTER EDITOR.

VOLUME 1, Nos. 1 & 2 (ARTICLES ON GONDWANA PALYNOSTRATIGRAPHY AND ON FOSSIL FUNGAL SPORES);

VOLUME 3, No. 1 (CRETACEOUS SPORE-POLLEN FLORAS);

VOLUME 3, No. 2 (PENNSYLVANIAN-PERMIAN, NORTH AMERICA).

ED.

BOOKS NEW CHINA, NEW YORK

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