

NOON MEETING—SEPTEMBER 27, 1978

JOHN A. S. ADAMS—Biographical Sketch



Dr. John A. S. Adams received his geological education at the University of Chicago. He earned his PhD in 1951 following two years of study in Norway under T. F. W. Barth. He was a member of the Norsk Polarinstittutt expedition to Spitsbergen in 1950. From 1951-1954 he served in the Department of Chemistry at the University of Wisconsin as Project Associate and lecturer in geochemistry. In

1954 he was appointed Assistant Professor of Geology at Rice University. He served as a distinguished lecturer for the AAPG in 1955. He was elected to the Council of the Geochemical Society for 1957-59. He became acting and then full Chairman of the Department of Geology, Rice University for the years 1960-1971. He served as an editor for *Geochimica et Cosmochimica Acta* for 1960-66. In 1971 he was appointed Principal Investigator on Lunar Samples. During 1972-73 he served as President of the Houston Philosophical Society. He was elected Vice President in 1975-76 and President in 1976-77 of the South-Central Section of the Geological Society of America. He is currently a full Professor of Geology at Rice University. He is also a Visiting and Adjunct Professor, Public Health, Environmental Health, The University of Texas Health Science Center in Houston.

ATMOSPHERIC CARBON DIOXIDE AND FUEL OPTIONS OF THE FUTURE - FOSSIL FUEL VERSUS THE BURNING OF WOOD (Abstract)

For the past 40 years it has been recognized that the carbon dioxide content of the atmosphere is increasing and has increased at least 10% since 1900. The combustion of fossil fuels produced more than enough carbon dioxide to cause this observed increase. The Office of Carbon Dioxide Effects Research and Assessment of the Department of Energy estimates [sic] an annual budget of between 2 to 16 million dollars to gain some understanding of the problems involved. Proponents of nuclear energy have suggested that the effects of atmospheric carbon dioxide build-up from increased coal combustion are less understood and potentially more dangerous to mankind than the waste product and by-product problems of nuclear energy. The carbon dioxide content of the atmosphere is rapidly increasing (from a trace constituent) toward a point where major climatic changes may be postulated to occur. An overall increase in temperature at the surface of the earth will probably enlarge the arid regions of the earth and reduce, worldwide, the areas available for agriculture. The complexities and uncertainties in the carbon dioxide cycle allow a wide range of hypotheses; as well as hypothesis piled upon hypothesis to make a scenario.

Among many possible scenarios, it cannot be disproved that:

- 1) wood combustion has been more important than fossil fuel combustion because most of the people in the world burn wood for cooking and process heat at the rate of over one metric ton per capita per year. Large scale forest clearing for agricultural purposes contributes even more to the depletion of the cellulose reservoir of the earth.
- 2) the atmospheric carbon dioxide content is primarily controlled by the total amount of photosynthesis, which has fallen behind in cellulose formation as compared to cellulose combustion
- 3) the most prudent and feasible public policy for environmental and aesthetical reasons is to initiate an orderly but massive reforestation program worldwide.