

NEWSLETTER



Number 6
February 1990

**International Humic
Substances Society**

Results election of Vice-President

Of the 440 ballot papers which were sent out, 179 were returned. The votes favoured Dr M.H.B.Hayes over Dr C.Saiz-Jimenez by a clear majority.

Because the question of declaring the election to have a special character was approved by practically all members who returned ballot papers, Dr Hayes will, therefore, serve for a period of three years instead of two. In this way the next Vice-Presidential election will come into phase with other Board positions.

IHSS membership fee

The Board of Directors at its recent meeting in Denver, Colorado, has reluctantly decided to increase membership fees:

The Full Membership fee will be raised from US\$ 10 to US\$ 20, as from January 1, 1991. Student Membership will then go up from US\$ 5 to US\$ 10, and Institutional Membership will be increased to US\$ 200.

In order to implement these changes, no Multiple Payments at the old rate will be accepted as from January 1, 1990. Members wishing to submit their dues for a period of up to 4 years can still do so at the old rate for the years that they are in arrears, as well as for the year 1990. For the years starting from January 1, 1991 and onwards, the new rates will apply.

The Treasurer will contact all members who are not paid up until 1989 and indicate to them the amount which they owe the Society. Members will have until March 31, 1990 to correct their financial status. Those who by then will still be more than 2 years in arrears will have their membership terminated.

Please address your questions and comments regarding your membership status to the Treasurer, Dr P.MacCarthy, Dept of Chemistry and Geochemistry, Colorado School of Mines, GOLDEN, CO 80401, U.S.A.

Fifth International IHSS Meeting

As most members will know, the Fifth International Meeting will be held at NAGOYA, Japan, August 6-10, 1990.

The five main topics of the meeting are:

- Chemical aspects of humic substances
- Biochemical and biological aspects of humic substances
- Humic substances in geoscience
- Environmental aspects such as interactions of humic

substances with agrochemicals
-Utilization of humic substances

~~The conference fee will be ¥40,000 (¥45,000 for non-members)~~ when paid before June 1, 1990. This will include the Abstracts, field trip, reception and refreshments. An additional ¥5,000 will be charged for payments made after the above-mentioned date. The fee for students will be half of the above amounts.

A preliminary program is scheduled to be sent out by June 15, 1990.

For further information contact:

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International Symposium on Humic Substances in the Aquatic and Terrestrial Environment

The Symposium was held in Linköping, Sweden, August 21-23 1989. 110 participants representing 18 countries attended the Symposium. 32 papers were presented orally and 39 posters were displayed.

The Scientific program was divided into five sessions. Each session was introduced by a plenary lecture given by an invited speaker:

- I. Factors to be Considered in the Isolation and Characterization of Humic Substances: R.MALCOLM, Denver, U.S.A.
- II. Photochemical Degradation of Humic Substances in the Sea; Role in Global Geochemical Carbon Cycling: K.MOPPER, Miami, U.S.A.
- III. Ion Binding by Humic Substances. Considerations Based on Solution Chemistry and the Heterogeneity of Humic Substances: J. EPHRAIM, Linköping, Sweden.
- IV. Biological Mechanisms in Activity of Humic Substances in the Aquatic Environment: R.PETERSEN, Lund, Sweden.
- V. Mutagenic Compounds from Chlorination of Humic Substances: B.HOLMBOM, Åbo, Finland.

The conference was a success and all delegates participated in all sessions, scientific as well as social.

Approximately 45 papers will be published in the Proceedings, a special volume of the series Lecture Notes in Earth Sciences, issued by Springer Verlag, expected at the beginning of 1990.

Dr Hans Borén

New publications

-AVERETT,R.C., LEENHEER,J.A., McKNIGHT,D.M. & K.A.THORN (Editors): Humic Substances in the Suwannee River, Georgia; Interactions, Properties, and proposed Structures. U.S. Geological Survey Open-File Report 87-557, pp. 377. For more details as to the contents of this report, see p. 8 of this Newsletter.

Copies of the report may be purchased from:

U.S. Geological Survey, Books and Open-File Reports Section
Box 25425
Federal Center
DENVER, CO 80225-0425
U.S.A.

-MacCARTHY,P., CLAPP,C.E., MALCOLM,R.L. & P.R.BLOOM: Humic Substances in Soil and Crop Sciences, Selected Readings. Soil Science Society of America, Madison.

-SUFFET,I.H. & P.MacCARTHY: Aquatic Humic Substances, Influence on Fate and Treatment of Pollutants. American Chemical Society, Washington. pp. 864. ISBN 0-8412-1428-X. For more details see p. 9 of this Newsletter. Copies can be obtained from the American Chemical Society, Washington DC. Price \$110.

Availability of Books sanctioned by the IHSS

-Proceedings of the 1st Meeting of the International Humic Substances Society, ESTES PARK, Colorado, August 1983. Special Issue of Organic Geochemistry, Volume 8(1) 1985, 146 pages. Available from Organic Geochemistry, Pergamon Press, Headington Hill Hall, Oxford, England OX3 0BW.

-HAYES,M.H.B. & R.S.SWIFT (Editors): Volunteered Papers of the 2nd International Meeting of the International Humic Substances Society, BIRMINGHAM, 1984.

University of Birmingham Press (1985), pp. 277.
Price to members \$15, to non-members \$25.

~~BECHER, G. (Editor): Volunteered Papers from the Third International Meeting of the International Humic Substances Society, OSLO, Norway, August 4-8 1987. Special Issue of The Science of the Total Environment, Volume 62, April 1987, 505 pages. Price to members \$40, to non-member \$50.~~

~~-IHSS Series: Humic Substances in Soil, Sediment and Water~~

I. AIKEN, G.R., D.M. McKNIGHT, R.L. WERSHAW & P. MacCARTHY
(Editors):
Geochemistry, Isolation and Characterization.
Wiley InterScience, New York 1985, pp.692.
Price to members \$50, to non-members \$75.

II. Structure in press

III. Metal-Organic Interactions scheduled to be
available by end 1990

IV. ?

Members are requested to address all correspondence regarding Society books to the Treasurer, Dr P. MacCarthy, Dept of Chemistry and Geochemistry, Colorado School of Mines, GOLDEN, CO 80401, U.S.A.

Local IHSS representatives

Following up on a suggestion by Dr Hayes, the Board of Directors of the Society has approved the idea of appointing local IHSS representatives who, for instance, would be able to distribute news about the activities of the Society, organize membership drives and collect membership dues and other fees in local currency.

Society Logo

Artists amongst members are invited to submit drafts for an appropriate Logo for the Society, which could appear on the cover of this Newsletter and on all official Society correspondence.

Standard and Reference Humic and Fulvic Acids and Bulk Source Materials available from the International Humic Substances Society

A. Standard Samples

Standard fulvic and humic acid samples satisfy the following criteria:

1. The sample must have come from a site specifically designated by the IHSS for this purpose.
2. The sample must have been prepared according to a specific procedure designated by the IHSS.
3. The operations involved in (1) and (2) must have been conducted under the direct supervision of the IHSS.
4. The sample must have been designated as a standard by the IHSS.

The fulvic and humic acid standards can be purchased in 100mg quantities only, and are limited to 100mg of each standard per year to each purchaser at the listed price. The standard material should be used only as an analytical standard, and is not intended to be used for regular experimental purposes. Hopefully, the present stock will last for at least 25 years.

B. Reference Samples

Reference fulvic and humic acid samples do not satisfy one or more of the criteria listed for the standard samples, but meet both of the following conditions:

1. The sample has been prepared from a clearly designated source material, and its preparation must have been described in detail.
2. The material has been homogenized by the IHSS, and must be distributed by the IHSS.

The majority of the present reference samples were extracted from the same material from which the standard humic and fulvic acids were extracted. Upon depletion of the existing supply of reference material, another batch of humic and fulvic acids will be prepared from the existing stock of bulk source material (see section C). All reference samples are expected to be similar but not necessarily identical to the original standard or reference material. In other words, the reference sample may change slightly in composition with time as new batches are prepared, whereas the standard material comes from a constant, one-batch, large amount, long-term entity.

C. Bulk Source Material

Bulk source material was conceived to be used primarily for the evaluation of future, updated or advanced standard extraction procedures for humic and fulvic acids.

A compilation of characterization data accumulated on the standard and reference samples, as well as on the bulk samples will be furnished to each purchaser. In order for the IHSS to accomplish the goals for which these sets of samples were intended, it is expected that users will provide

the IHSS with preprints or reprints of all publications relating to the use of these materials. The Society intends to periodically update the compilation of data furnished to purchasers.

PRICE LIST

Standard samples

origin	FULVIC ACID		HUMIC ACID	
	code	price per 100mg	code	price per 100mg
Suwannee river	1S101F	\$150	1S101H	\$150
Soil	1S102F	\$150	1S102H	\$ 40
Peat	1S103F	\$150	1S103H	\$ 25
Leonardite	-	-	1S104H	\$ 25
Nordic aquatic env.	-	-	-	-
Summit Hill soil	-	-	-	-

Reference samples

origin	FULVIC ACID		HUMIC ACID	
	code	price per 100mg	code	price per 100mg
Suwannee river	1R101F	\$150	1R101H	\$150
Soil	1R102F	\$150	1R102H	\$ 40
Peat	1R103F	\$150	1R103H	\$ 25
Leonardite	-	-	1R104H	\$ 25
Nordic aquatic env.	-	-	1R105H	\$150
Summit Hill soil	-	-	1R106H	\$ 40

Bulk Source material

origin	code	price per 500g
Elliot silt loam soil (Joliet, Ill)	BS102M	\$50
Pahokee peat (Ocachobee, Fla)	BS103P	\$50
Gascoyne leonardite (Gascoyne, N.D.)	BS104L	\$50

Orders should be sent to:

Dr P. MacCarthy
 Department of Chemistry and Geochemistry
 Colorado School of Mines
 GOLDEN, Colorado 80401, U.S.A.

HUMIC SUBSTANCES IN THE SUWANNEE RIVER, GEORGIA: INTERACTIONS, PROPERTIES,
AND PROPOSED STRUCTURES

Edited by R.C. Averett, J.A. Leenheer, D.M. McKnight, and K.A. Thorn

U.S. GEOLOGICAL SURVEY

Open-File Report 87-557

- A. History and Description of the Okefenokee Swamp--Origin of the Suwannee River, *By R.L. Malcolm, D.M. McKnight, and R.C. Averett*
- B. Isolation of fulvic and humic acids from the Suwannee River, *By R.L. Malcolm, G.R. Aiken, E.C. Bowles, and J.D. Malcolm*
- C. Interactions of organic contaminants with fulvic and humic acids from the Suwannee River and other humic substances in aqueous systems, with inferences to the structures of humic molecules, *By D.E. Kile, C.T. Chiou, and T.I. Brinton*
- D. Complexation of copper by fulvic acid from the Suwannee River--Effect of counter-ion concentration, *By D.M. McKnight and R.L. Wershaw*
- E. Occurrence and distribution of selected trace metals in the International Humic Substances Society's standard and reference fulvic and humic acids isolated from the Suwannee River, *By H.E. Taylor and J.R. Garbarino*
- F. Nitrogen and amino acids in fulvic and humic acids from the Suwannee River, *By E.M. Thurman and R.L. Malcolm*
- G. Electron-spin resonance of fulvic and humic acids from the Suwannee River, *By F.Y. Saleh, L.J. Theriot, S.K. Amani, and Inyoung Kim*
- H. Methods for determination of structural models of fulvic acid from the Suwannee River by convergent independent analyses, *By J.A. Leenheer*
- I. Elemental Analysis and heat of combustion of fulvic acid from the Suwannee River, *By M.M. Reddy, J.A. Leenheer, and R.L. Malcolm*
- J. Molecular size and weight of fulvic and humic acids from the Suwannee River, *By G.R. Aiken, P.A. Brown, T.I. Noyes, and D.J. Pinckney*
- K. Fluorescence measurements of the volume, shape, and fluorophore composition of fulvic acid from the Suwannee River, *By M.C. Goldberg and E.R. Weiner*
- L. Acid-base titration and hydrolysis of fulvic acid from the Suwannee River, *By E.C. Bowles, R.C. Antweiler, and Patrick MacCarthy*
- M. Proton nuclear-magnetic-resonance studies of fulvic acid from the Suwannee River, *By T.I. Noyes and J.A. Leenheer*
- N. Nuclear-magnetic-resonance spectrometry investigations of fulvic and humic acids from the Suwannee River, *By K.A. Thorn*
- O. Significance of density determination in molecular structures comprising fulvic acid from the Suwannee River, *By P.A. Brown and J.A. Leenheer*
- P. Structural components and proposed structural models of fulvic acid from the Suwannee River, *Compiled by J.A. Leenheer, D.M. McKnight, E.M. Thurman, and Patrick MacCarthy*

Denver, Colorado
1989



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