1990. The next international symposium will be held in mid-April 1990 at Louisiana State University, Baton Rouge, Louisiana USA. To apply for membership, send checks (US bank or international money orders (US dollars drawn on US banks) made out to the International Association of Astacology. Address is: IAA, P.O. Box 44650, University of Southwestern Louisiana, Lafayette, Louisiana 70504 USA. Phone: (318) 231-5239.

" ARRETEZ LA DESTRUCTION DES ECREVISSES

"Stop the Destruction of Crawfishes"

Source: L'Astaciculteur de France

December 1988

Original in Czech!

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INTERNATIONAL ASSOCIATION
OF ASTACOLOGY
I.A.A.

NEWSLETTER OF THE INTERNATIONAL ASSOCIATION OF ASTACOLOGY

Dec. 1988/Jan. 1989 Volume 11, Number 2

Jay V. Huner, Editor, P.O. Box 44650, University of Southwestern Louisiana, Lafayette, Louisiana 70504 USA

FRESHWATER CRAYFISH, A JOURNAL OF ASTACOLOGY VOLUME VII PUBLISHED--The proceedings of our August 1987 symposium in Lausanne, Switzerland has been published. Price will be about 60 Swiss Francs. Inquiries should be directed to the editor: Professor Pierre Goeldlin, Directeur du musee Cantonal de Zoologie,Palais de Rumine, 6 Place de la Riponne, CH-1000 Lausane, Switzerland.

INTERNATIONAL CRAYFISH SYMPOSIUM VIII, BATON ROUGE, LOUISIANA USA--Member Robert Romaire (School of Forestry, Wildlife & Fisheries, Louisiana State University, Baton Rouge, Louisiana 70803 USA) is a co-organizer of this conference. At this writing, late January 1989, he informs us that final dates for the symposium have not been set but should fall very near April 15, 1990. Final dates and further information should be forwarded with the next newsletter.

PIERRE LAURENT RECUPERATES--Past President Laurent has informed me that his recuperation from the injuries sustained in an auto accident last September has gone well. He has now been working for the past two months. His wife, Monique, is also doing very well.

JOZEF KORWIN-KOSSAKOWSKI DIES IN POLAND--The following

necrology was prepared by Pierre J. Laurent, a good friend of Professor Kossakowski. It is printed here in French as technical difficulties made the translation unavailable for this newsletter issue; however, the translation will be published in the next newsletter. Those wishing to communicate to the family may write to: Dr. Michal Korwin-Kossakowski, Inland Fisheries Institute, Department of Pond Fisheries, Zabieniec, 05-0500 Piaseczno, Poland.

J. Kossakowski n'est plus de ce monde

C'est avec une grande tristesse que nous avons appris le décès de notre Collègue J. Kossakowski.

It a été emporté le 19 Novembre dernier par une grave maladie à évolution très rapide.

Le Dr. Kossakowski a été longtemps le Secrétaire Scientifique de l'Institut des pêches dans les eau intérieures à Olsztyn, en Pologne du Nord, mais c'est aux écrevisses que ce chercheur de talent a voué l'essentiel de sa carrière.

Parmi ses nombreuses publications, il a écrit, en 1966, un important ouvrage de synthèse intitulé "Raki" ce qui veut dire "les écrevisses". Une traduction anglaise de 163 pages a été faite aux Etats Unis en 1971**.

J. Kossakowski avai participé à plusieurs des congrès de l'Association Internationale d'Astacologie dont it était membre depuis sa fondation. On l'avait vu pour la dernière fois au Congrès de Lausanne, en 1987.

It était membre du "Board" de l'Association Internationale d'Astacologie et en tant que "correspondant" il servait d'intermédiaire entre les astacologues des Pays de l'Est et ceux des autres contrées. Il a en particulier assumé, durant des années, la diffusion du bulletin de l'Association Internationale, News letter, en Unon Soviétique et dans plusieurs Républiques Socialistes.

Il avait pris sa retraite depuis quelques années mais il était resté très actif, prenant part aux réunions scientifiques organisées en Pologne et ailleurs, pratiquant le sport et poursuivant des recherches sur l'histoire de sa Famille.

Ceux quit l'ont connu et ils sont nombreux en France, garderont de lui le souvenir d'un homme distingué, affable, toujour souriant, copétent et polyglotte accompli.

En perdant J. Kossakowski beaucoup d'astacologues ont perdu plus qu'un collègue mais un ami.

**On peut se procurer la traduction en anglais de l'ouvrage de J. Kossakowski auprès de U. S. Department of Commerce, National Technical Information Service, Springfield, Virginia, 22 151 U.S.A. La traduction a été faite par H. M. Massey en 1971.

CRAYFISH NEWS FROM CANADA--Member George Morgan (Ontario Ministry of Natural Resources, P.O. Box 500, Bancroft, Ontario KOL 1CO Canada) has forwarded some interesting information about crayfish in Ontario.

"I think you will be interested in hearing about our latest crayfish harvesting strategy. This ummer (1988) we (Dr. Momot and myself) imposed a sex and size regulation on the Orconectes virilis fishery in Dock Lake. Although we have maintained the high effort of 6000 trap-days (200 traps fished for 30 days), we are only harvesting males greater than or equal to 30 mm carapace length (approximately the size where 50% of the males reach sexual maturity). This harvesting strategy will be maintained for three years to see if we can cause the population to cycle.

"More importantly we are developing with Dr. Louis Botsford (University of California, Davis) a computer model of crayfish population dynamics (based on the 1976 to 1985 data). Thus we hope to predict the population response(s) to the male only minimum size limit fishery and at the same time emperically verify the model. I believe this will provide the necessary proof to substantiate our claim that size limits are counter productive at northern latitudes.

"Besides the work on O. virilis I have started looking at the known distribution of the introduced crayfish species Orconectes rusticus in Ontario. The recent proposal to harvest North American crayfish (in particular Orconectes virilis, Orconectes rusticus, and Cambarus robustus) for Swedish entrepreneurs and the 'bad guy' reputation of O. rusticus (from studies in northern Wisconsin) has increased the publics interest in crayfish and the possible detrimental impact of species introductions. The main concern is the spread of this species into the unproductive watersheds of the Canadian Shield (i. e., northern Ontario). As far as I can ascertain O. rusticus has been introduced or spread into most suitable habitats south of 45 degrees Latitude (and in most cases it is the dominant species). The only verified distribution records north of 45 degrees are two isolated pockets along the north shore of Lake Superior: 1) Pounsford Lake (48° 30' 88° 47') near Thunder Bay, 2) Carp River (46°57' 84°35' near Sault Ste Marie, and a population in Lake Traverse (45°58' 78°03'), Algonquin Provincial Park (discovered this summer). [Interestingly O. rusticus was not collected during a survey of the watershed downstream from Pounsford Lake to Lake Superior.] Since crayfish samples are not routinely collectaed during lake, river or stream inventories I am sure that there are other areas where populations of O. rusticus exist. The information to date indicates that O. rusticus has successfully

spread throughout southern Ontario but has not gained a foothold in northern Ontario. Also we have not had any indication/report of damage or impact on any aquatic ecosystem as documented in northern Wisconsin? ....

"...I recently heard from Walter Momot that he found another population of O. rusticus in northern Ontario: Lenore Lake (48°03' 89°36') near Thunder Bay."

Other observations about crayfish in Canada from George include: 1) Brigitte Portelance (Quebec) has received funding for a three year research project on crayfish culture and 2) in Ontario, the Ministry of the Environment has just completed a field study designed to determine the mathematical relationship between the probability of catching crayfish with minnow traps and their relative abundance as determiend by direct observation by SCUBA divers and to determine the sex, size and species bias in the catch efficiency of minnow traps.

CRAYFISH NEWS FROM SPAIN--Board Member Andres Salvador Habsburgo Lorena (Agrofood S.A., c/. Serrano, 63, 28006 - Madrid, Spain) recently sent the following information about the crayfish situation in Spain.

"On November 19th [1988] I received an invitation from a Spanish member of the "W. W. F." to visit a landstrip in "La Mancha". This flat highland with a continental climate ("La Mancha" is derived from the arabic and means "the dry one") is the largest rainwater collector and underground water reservoir of Spain. Its extension is some 270 km East - West and some 170 km North - South. Its watershed is endorreic, this means, rain waters run to a closed water basin, only seasonally excessive waters overflowing in direction to the Atlantic ocean. There are certain elevations in the watershed and on its limits, forming an important underground water basin. The artesian wells, locally called "torcas", literally translated meaning "round depression of land with sharp edges" are caused by the freatic level. During eight to ten months these natural wells have a flowout of water. This water, emanating from several of these "torcas", can contribute to the formation of a temporary river, flowing for a certain distance and after some kilometers disappearing, or from a single one flooding and forming seasonal marshland. Some of these marshlands are deep enough to form an open watersurface, others, often the largest ones, even will maintain all year round some amount of water.

"In 1960 the size of the humid surface was calculated with 38,000 hectares. In 1970 these marshlands and/or lagoons had been reduced to an estimated size of 25,000 hectares. By now these marshlands have further been reduced to one fifth of their size by dredging their runoff and nearby riverbeds some 20 to 30 centimeters deeper to gain agricultural land. The so obtained land has added very little income to the farmers, as the soil of the agricultural land gained is little fertile. Wind erosion contributes to the fact that the surface soil, containing high mineral concentration due to centuries of

former surface water evaporation, is blown onto the surrounding land so that finally waters are gone, watervegetation lost and agricultural land endangered.

"Very few landowners made leevees around their marshlands and increased the natural waterdepth by storing more water in these lagoons or "tablas". In former times the aim was to shoot waterfowl, nowdays some of the landowners became interested in the conservation of nature.

"To cover cost for maintianing the leevees or building new ones, a study was made, to install in these waters or on nearby land a crayfish-farm. This study showed, that the low dissolved oxygen content of the water in the lagoons, caused by over one meter depth of decaying organic matter, makes it impossible to utilize it for aquacultural purposes.

"But at the same time it was confirmed, that since 1985 Procambarus clarkii is well established in all the groundwatertables, from which the Guadiana river is seasonally the principal overflow. The Guadiana river has its source also in some "torcas". These waters flow to the "Lagunas de Ruidera". The overflow from the last, streamdown, lagoon is the place where the river is born, running for a while, then disappearing for long stretches and appearing again.

"Crayfish capturing of the species Procambarus clarkii is done in the seasonally running rivers like the Guadiana, the Zancara and the Giguela, in the waterflows to the lagoons, in the above mentioned "torcas" and in man made deep wells, which are drilled increasingly for irrigation purposes, thus additionally lowering the freatic waterlevel.

"It seems, that this species is spreading and replacing the native species of Austropotamobius pallipes pallipes, lately also named Atlantoastacus pallipes, which population has decreased very strongly in the last decades due to man made dredging activity, alternating environmental aquifers and the crayfish plague.

"The efforts made by the Natural Institute for Conservation of Nature to eliminate this new species is limited to the open waters. The result of this effort is small. Reality shows that the Procambarus clarkii is established and well accepted by the local people as a suitable substitute for a former abundantly existing species."

COMMON NAMES-AUSTRALIAN CRAYFISHES--The following letter was forwarded from John Platt, President of the Marron Growers Association of W.A., Inc. (G.P.O. Box T1818, Perth, Western Australia 6001, Australia).

"We have noted with concern the confusion that apparently exists within the freshwater crayfish industry, the media, and some government bodies with reference to the identification by "common names" of two species of Australian freshwater crayfish.

"The species involved are Cherax tenuimanus and Cherax quadricarinatus.

"Cherax tenuimanus is a native of the south-west of Western Australia and has been commonlyu known both nationally and internationally as the MARRON since early this centruy; in the market place, in scientific and government literature, and in the industry it is the only freshwater crayfish to have been thus known.

"Cherax quadricarinatus is a native of Queensland, and northern Australia in general. Until 1987/88 this species has had several common names, including RED CLAW and the MITCHELL RIVER CRAYFISH. Nowhere (prior to 1987) has C. quadricarinatus been associated with the common name of marron.

"In 1987 some growers of C. quadricarinatus recognized the marketing advantages of C. tenuimanus and began to market their product (C. quadricarinatus) as "QUEENSLAND MARRON".

"This has led to a lot of confusion, which really appears to have done nobody any good.

"One result has been that C. tenuimanus (the MARRON) has been mistakenly attributed with the "porcelain disease" caused by the microsporidian Thelohania spp., which has been identified in C. quadricarinatus (RED CLAW). Thelohania has never been found in either wild stocks or cultured stocks of C. tenuimanus (MARRON) in Western Australia (pers. comm. Dr. J. Langdon, Australian Fish Health Reference Laboratory, Victoria, and Dr. L. Evans, Curtin University, W.A.).

"Also, the confusion has possibly facilitated the false identification of freshwater crayfish in the market place.

"Obviously if this confusion is allowed to continue it can only have a negative effect on the national and international image of the Australian freshwater crayfish industry as a whole.

"We call upon the industry to work towards correcting this problem, and we call upon the media to assist by clearly identifying between the main commercial species of Australian freshwater crayfish."

MORE ABOUT PSOROSPERMIUM IN SCANDINAVIA--Board Member Ossi Lindqvist (University of Kuopio, Kuopio, Finland) reported finding significant numbers of Psorospermium in Astacus astacus populations in central Finland and wondered if this represented an overlooked phenomenon. He recently sent a letter that he received from Member Kenneth Söderhäll (Dept. of Physiological Botany, University of Uppsala, Box 540, S-751 22 Uppsala, Sweden) in which Kenneth provides his own experience with this "parasite" in Sweden.

"...I do not agree with your assumption that maybe Psorospermium has been abundant in Astacus but that now we are looking for this organism. We have, as you know, for than 15 years observed and analysed crayfish for crayfish plague as well as other parasites. Every year I estimate that roughly 400 - 700 crayfish are carefully analysed. I can assure that we would have discovered Psorspermium during our analysis if there were any in the examined crayfish. Before 1983 we only observed

Psorspermium in a small number of crayfish, but the last 5 years we find the organism in a majority of examined crayfish. Thus my interpretation is that the parasite has increased dramatically in Swedish crayfish populations. We have also seen it in a few specimen of Pacifastacus.

PROCAMBARUS CLARKII DISTRIBUTION SURVEYED IN FLORIDA (USA)--Michael R. Miltner (Florida Institute of Technology, Melbourne, Florida 32901-6988) has completed a survey of P. clarkii's distribution in Florida. He notes: "...Up shot of the field survey was that we found no evidence to suggest that the red swamp crawfish has expanded its range either via introductions or natural eastward movement from the Apalachicola basin. Did find one localized breeding population along the Atlantic coast, within 75 yards of the marsh, south of St. Augustine. An old back-to-the-lander introduced clarkii 4 or 5 years ago and still harvests them from a series of small isolated ponds, with no evidence of colonization of surrounding drainage....Anyway, data do not give the Game and Fish Commission any reason to reconsider restriction on culture, movement of live product, etc. in peninsular Florida...."

RE-ESTABLISHMENT OF ASTACUS ASTACUS IN FRANCE--Past President Pierre Laurent writes that 1,000 A. astacus adults from Finland and Yugoslavia, 300 adults from Switzerland, and 3500 summerlings from a West German crayfish farm have been stocked in several selected ponds in the Parc Naturel Regional de Lorraine in central France. Prof. Laurent is optimistic that this will be successful.

DANISH CRAYFISH FARMERS ASSOCIATION FORMED--Board member Ossi Lindqvist (University of Kuopio, Kuopio, Finland) sent information Nordisk Aquakultur 8/88 about a Danish Crayfish Farmers Association. It has 30 members. Target species are Astacus, Pacifastacus, and OTHER crayfish species. We have no IAA members in Denmark. Professor Lindqvist could locate no addresses for the new association. Members knowing of this new association are encouraged to inform it of the IAA and extend an invitation for it to join our association.

MARRON SPAWNED IN USA--According to a letter from Al Smith (Freshwater Lobsters, P.O. Box 10141, Denver, Colorado 80210 USA) reports the first known, to your editor, successful spawning of Cherax tenuimanus in the USA. Efforts to cultivate this and other Cherax spp. continue in the USA.

NEUROPHYSIOLOGY OF THE CRAYFISH PUBLISHED IN THE USSR--Zh. P. Shuranova and Yu. M. Burmistrov (USSR Academy of Sciences, Institute of Higher Nervous Activity and Neurophysiology, 5a Butlerov str., Moscow 117485 USSR) write that their book, "The Neurophysiology of the Crayfish" was published in 1988 by "Nauka (Science)" in Moscow. The book is published in Russian.

WANTED: HUNGARIAN MEMBER SEEKS PLACE TO WORK WITH FRESHWATER CRAYFISH--IAA member Miklos Thuranszky (25 Belgrad rkp., 1056 Budapest, Hungary) is an agricultural engineer. He writes that the crayfish situation in Hungary is going to be changed as cooperatives and private farmers are keenly interested in breeding crayfish in the present economic situation. He wishes to become more involved with these aquacultural efforts and requests information and practical advice about cultivating crayfishes. Furthermore, Mr. Thuranszky has inquired if it is possible to have a study trip or to spend some time working at a farm or institute dealing with freshwater crayfish. Members are encouraged to communicate with him.

CRAYFISH PLAGUE IN TURKEY AND THE SOUTHEASTERN SOVIET UNION--Board Member Magnus Fürst (Freshwater Research Institute, S 170 11 Drottningholm, Sweden) recently spoke about the crayfish plague situation in Turkey and the Ukraine. He noted that the situation in Turkey is not good with very small, immature crayfish being heavily fished. Furthermore, the crayfish plague continues to be a major problem in that country and is a significant reason for crayfish mortality in the southeastern Soviet Union. Further information will be published when received.

UN/FAO PUBLISHES TECHNICAL PAPER ON "INTERNATIONAL INTRODUCTIONS OF INLAND AQUATIC SPECIES"--This paper (FAO Fisheries Technical Paper 294, 1988) was compiled by R. L. Welcomme in Rome, Italy. Crayfish species discussed in the text include Astacus astacus, Astacus leptodactylus, Orconectes limosus, Pacifastacus leniusculus, and Procambarus clarkii. This is a very useful text that should be reviewed by any persons contemplating moving crayfishes outside of their native habitats.

LOUISIANA SOFT-SHELL CRAWFISH ASSOCIATION ESTABLISHES GRADING SYSTEM FOR SOFT-SHELL CRAYFISH--Soft-shell crayfish for human consumption is a very recent development. Most of the world's supply comes from Louisiana. The Louisiana Soft-Shell Crawfish Association (P.O. Box 80125, Baton Rouge, Louisiana 70898 USA) represents a significant number of soft-shell crayfish producers and recently developed the following grading system for its products.

Category	Number per unit weight	Total Length
Jumbo Premium	15 & larger per pound (28+ g)	4+ inches (102+ mm)
Extra Large Premium	16-24 per pound (18.5-28 g)	3 1/2-4 inches (89-102 mm)
Large Premium	25-33 per pound	3 1/4-3 1/2 in.

	(13.5-18.4 g)	(83-88 mm)
Medium Premium	34-42 per pound (10.6-13.4 g)	3-3 1/4 inches (76-82 mm)
Soft Fryer**		

**Premium soft-shell crayfish cannot be missing any chelae and must be "buttery soft". All other crayfish are classified as soft fryers regardless of size.
[Membership in the LS-SCA is US$20 per year. Inquiries are welcomed.]

LIST OF SOFT-SHELL CRAYFISH PRODUCERS AVAILABLE--The Louisiana Soft-shell Crawfish Association maintains a list of soft-shell crayfish producers that is provided gratis upon request. Inquiries should be directed to the address given immediately above.

AQUACULTURE INFORMATION CENTER/NATIONAL AGRICULTURAL LIBRARY--The AIC/NAL provides reference retrieval services for those interested in obtaining information about various aquacultural subjects including crayfish culture. It invites authors to forward lists of publications and reprints to maintain its file. It publishes bibliographies on aquaculture-related topics in its Quick Bibliography Series and Aqua-Topics. These are free of charge and "Crawfish Farming (1979-1986): QB 87-50" is available. For information: National Agriculture Library, Aquaculture Information Center, Room 304; Attn: Bibliog., Beltsville, Maryland 20705 USA. Phone: (301) 344-3704.

AQUACULTURE ECONOMICS - THIRD ANNUAL INTENSIVE SHORT COURSE, JUNE 5-16, 1989 - CLEMSON UNIVERSITY--This 10 day course emphasizes the following topics: the role of aquaculture in food production; a review of economic concepts applied to aquaculture; economic factors affecting aquaculture at the farm level; managerial analysis for aquaculture; analyzing aquaculture investment decisions; bioeconomic analysis; marketing aquacultural products; public policy and aquaculture; and international aquaculture development. Direct inquiries to: Dr. Robert S. Pomeroy, Department of Agricultural Economics and Rural Sociology, 240 Barre Hall, Clemson University, Clemson, South Carolina 29634-0355 USA. Tel:(803) 656-5789.

CRAYFISH RECIPES FROM MEXICO AND ZAMBIA--Professon Alberto Huberman (Instituto Nacional de la Nutricion, Salvador Lubiran, Calle Vasco de Quiroga 15, Delegacion Tlalpan, 14000 - Mexico, D.F.) works with various crayfish hormones and has sent two interesting recipes for sacrificed test animals! He notes that he uses frozen crayfish left over from experiments.
CRAYFISH HEAD SOUP -- 400 heads. 8 tomatoes. 6 chipotle chilis, 1 twig Mexican tea (epazote). 1/2 kg green peas. 1/2 kg

potatoes. 1/2 kg carrots, fish filets. Other seafoods (crayfish tails will do!). coriander. finely cut onions. lemon.

Heads are washed well and left 1/2 hour in water. Wash again. Boil 1 hour. Eliminate water. Use a blender to grind the heads into a fine paste. Filter or strain the mixture. Separately cook 6 chipotle chilis, add the 8 tomatoes and boil. Blend. Add twig Mexican tea (epazote). Add this sauce to the strained crayfish extract. Boil 1-1 1/2 hour. Add peas, potatoes and carrots previously cooked and finely cut. When boiling, add cut up fish. Serve with lemon, finely cut onions and salty biscuits. (and coriander!).

GARLIC CRAYFISH (al mojo de ajo") -- 1 garlic head (or some 20 cloves). 400 crayfish. 8 "guajillo" chilis (cooked). a pinch of wild marjoram. 1 black pepper. 1 clove. Peel crayfish. Blend and strain other ingredients. Fry the crayfish meat with much butter for 20 minutes. Add sauce and serve.

CEVICHE -- Place crayfish tails in boiling, salty water. Boil 15 minutes. Drain well. Peel. Refrigerate. Mix meat with finely cut tomatoes, onions, coriander and chili (or catsup). Add olives, wild marjoram, olive oil and salt. Serve cold.

Member C. J. Grubb (P.O. Box 60287, Livingstone, Zambia) sends the following recipe.
ZAMBIAN CRAYFISH HEAD SOUP -- Cut heads just behind the eyes to remove the stomach. Boil remaining material including meat in claws "out of the head". Strain the material. Use butter to fry separately a few onions and garlic to a golden brown with curry powder. When all of this is well fried, add some water and boil the mix. Add the strained "head stock" and boil everything for about 20 minutes. There are many ways to thicken the soup but Mr Grubb does it by over boiling potatoes and liquifying them. In addition, one can add fresh ginger root, more fresh garlic or chillie pepper and a little sugar to taste. Some fresh peas can also be added and/or finely diced carrots.

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NEW MEMBERS--DECEMBER 1988 - JANUARY 1989

AUSTRALIA
1. L. E. Baldwinson, 123 Dandaloo St., Narromine, New South

Wales 2821
2. R. K. Howard, Greenbushes Marron Farm, P.O. Box 31, Greenbushes, Western Australia 6254

CANADA
1. Susan Waddy, Biological Station, St. Andrews, New Brunswick EOG 2XO

CHILE
1. Facturar A Instituto Profesional de Osorno, Rut 70.772.100-6, Casilla 933, Osorno

GREECE
1. Pantazis Panos, 21-25 Kotyleou St., 113 64 Athens

JAPAN
1. Noboru Takano, 3-5-10-502/Nishiwaseda, Shinjuku/Tokyo 169

USA
1. Jay Johnson, P.O. Box 905, Glen Cove, New York 11542
2. Ronald Malone, Dept. of Civil Engineering, Louisiana State University, Baton Rouge, Louisiana 70803
3. Andrew L. Sheldon, Biological Sciences, University of Montana, Missoula, Montana 59812.
4. Raymond Sifly, P.O. Box 1864, Orangeburg, South Carolina 29116

YUGOSLAVIA
1. Zavod Za Ribistvo, Zupanciceva 9, 61000 Ljubljana

FRESHWATER CRAYFISH, A JOURNAL OF ASTACOLOGY--Volumes IV, V, VI, and VII are available:

1. Freshwater Crayfish IV - Prof. Pierre J. Laurent, Avonnex a Marin, F-74200 Thonon les Bains Cedex, France. Payment is 63 Swiss Francs (surface mail included). Payment to International Association of Astacology's bank account, Credit Lyonnais, 1 Place Bel Air, Geneve, Switzerland, Compte No. 39128.4.00.001. 1979.

2. Freshwater Crayfish V - Van Nostrand Reinhold, 115 Fifth Avenue, New York, New York 10003 USA. Cost is approximately $35 US plus postage and handling. Check for exact price. 1983.

3. Freshwater Crayfish VI - Prof. Per Brinck, Ecology Building, S-223 62 Lund, Sweden. Cost is $30US plus $5US for surface postage. 1986.

4. Freshwater Crayfish VII - Prof. Pierre Goeldlin, Musee Zoologique, 6 Place de Riponne, CH-1005 Lausane, Switzerland. Contact Prof. Goeldlin for a price. First estimate is 60 Swiss Francs. 1988.

NEW BUSINESS MEMBER--IAA's newest business member is: Fercom Aquaculture Corporation, P.O. Box 797 (Attention: Dr. Christopher Austin), Moberly, Missouri 65270 USA. The firm is diversified producing catfish and other aquaculture crops. It is currently developing facilities for culturing several species of Australian Cherax.

POLICY ON BUSINESS MEMBERSHIPS--IAA values is business members as firms engaged in various astacological endeavors pay additional dues to help IAA pursue services to regular members. All business memberships will be announced in the newsletter as they are received and given special reference in our Directory of Astacologists.

CRAYFISH CULTURE IN AUSTRALIA/INFORMATION SOURCE IS AUSTASIA AQUACULTURE--Probably the best source of information about culture of Australian crayfishes is the Austasia Aquaculture magazine. Published by DOS O'Sullivan, it provides up to date information that is most useful. Volume 3, Numbers 3 and 4 1988, include a two part article on "Backyard & Farm Dam Culture" of yabbie, Cherax destructor. Part two provides very helpful insight into building very low cost hatchery systems which the author, John Lunnay (Southern Freshwater Lobsters, P. O. Box 443, Noarlunga Centre, South Australia 5168, Australia), designed. More information about Austasia Aquaculture may be obtained by writing to Mr. O'Sullivan at P.O. Box 1275, East Victoria Park, Western Australia 6101, Australia.

WORLD AQUACULTURE SOCIETY: MEMBERSHIP AND CRUSTACEAN NUTRITION--(1) The World Aquaculture Society is an organization that reaches all corners of the globe and publishes a very useful magazine, World Aquaculture, and the quarterly Journal of the World Aquaculture Society. Membership dues are very reasonable at $30 US per year. Inquiries may be sent to the World Aquaculture Society, 16 East Fraternity Lane, Baton Rouge, Louisiana 70803 USA. (2) The WAS has a very active crustacean nutrition group. It publishes The Crustacean Nutrition Newsletter (A Publication of the International Nutrition Working Group and the World Aquaculture Society). The current issue, Vol. 5, No. 1, January 23, 1989, includes an article about freshwater crayfish nutrition studies in Italy. Cost of the newsletter is $3 US annually. Each issue averages over 35 pages. Direct inquiries to WAS at the address provided above.

MEMBERSHIP INFORMATION--INTERNATIONAL ASSOCIATION OF ASTACOLOGY--Membership is open to anyone interested in the study of freshwater crayfishes or their prudent exploitation. Membership categories are: regular, US$25.00; student, US$12.50; and business, US$50.00. Members receive the quarterly IAA Newsletter and Directories of Astacologists (published irregularly). Current dues cover the period August 1987-April