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INTERNATIONAL ASSOCIATION
OF ASTACOLOGY
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NEWSLETTER

J.F. Payne and J. Huner, editors

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MEMBERSHIP INFORMATION -- Membership in IAA is open to anyone interested in the study of astacology. Dues are \$20 US for the intervals between international symposia (2 or 3 years). A quarterly newsletter is published. Send-funds/inquiries to:

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MEMBERSHIP STATUS -- If there is an asteris (*) next to your name on your mailing label, we have received your dues for 1984-87. If there is no asteris, we have no record of having received your dues for 1984-87. Because of problems with our membership list, we will accept a statement from you that you paid your dues but you must send it to Dr. Payne. IF WE HAVE NOT RECEIVED A COMMUNICATION FROM THOSE WHO HAVE NOT PAID DUES BY 1 DECEMBER 1986, WE WILL PURGE THEIR NAMES FROM OUR MEMBERSHIP ROLLS.

SEVENTH CONGRESS, INTERNATIONAL ASSOCIATION OF ASTACOLOGY -- Place: Lausanne, Switzerland. Dates: 3-5 August 1987. Chairman of Organization Committee: Professor Pierre Goeldin, Directeur du Musee Zoologique de Lausanne. Meeting Place: Palais de Rumine, Center of the City of Lausanne, postal address, 6 Place de la Riponne, CH 1005 Lausanne, Switzerland. Registration Fee: Participants, 220 Swiss Francs; students and accompanying persons, 110 S.F. (US \$1 = 1.8 S.F.). Hotels: 1986 prices per night, breakfast, taxes and service charges included:

	Hotels***** to **** with bath or shower	Hotels*** to * without bath
single room	170-110 S.F.	55-23 S.F.
double room	220-150 S.F.	80-38 S.F.

For information on accomodations: Tournit Office and Convention Bureau, 60 Avenue d'Ouchy, CH 1000 Lausanne 6, Switzerland. Meals: Lunch, 25 S.F. There is a large choice of restaurants around Palais de Rumine including cheap fast food restaurants. Post-Symposium excursions: A one or two day excursion to a place of interest to astacologists will be arranged.

JOHN WRIGHT IS ILL -- John S. Wright of Santa Barbara, California, dedicated astacologist and longtime member of IAA, suffered loss of both kidneys in May of this year and subsequently suffered a massive stroke. Under intensive therapy, he has regained use of his right arm and partial use of his right leg. The left arm and leg show hopeful signs, and his goal is to catch up with long neglected correspondence. After all, if a crayfish can re-generate, why can't John? Press Release from the Wright Family.

RED SWAMP CRAYFISH RATED POORLY AS FOOD IN SWEDEN -- According to the Associated Press in a news release from New Orleans, Louisiana USA (State Times, Baton Rouge, Louisiana, 23 August 1986), food experts at the major Stockholm newspaper, Dagens Nyheter, rated Louisiana red swamp crayfish, *Procambarus clarkii*, as inferior to Swedish and Turkish crayfish as a food item stating, 'it is dark, red, large and sweetish in taste; the broth is muddy and the skin and claws tough'. There is hope, however, for Louisiana exports. In a July 1986 telephone conversation with your junior editor, Swedish IAA member Magnus Fürst noted that his countrymen had imported 50 tonnes of precooked, frozen red swamp crayfish from Louisiana this year. He personally felt that they were too salty with too little dill but were still superior to the Turkish product.

MORE INFORMATION SOUGHT ON CRAYFISH TAXONOMY -- Jerry G. Wallis (657 Second St., Trenton, New Jersey 08611 USA) is a long standing IAA member. He and fellow IAA member Joe Black (Biology Dept., Louisiana College, Pineville, Louisiana USA) are working on distribution records of Louisiana crayfishes and he is still trying to get a paper together on relationships of *Cambaroides japonicus* to other astacids. [Jerry is a conservative who considers cambarids to be a subfamily of Astacidae.] Jerry says that '...I wish the IAA were a bit more systematically oriented and dealt more with North American crayfishes....' We are, of course, what we make of ourselves. An ecologist might say the same thing about his/her specialty. Thus, your editors encourage you, the membership of the IAA, to participate in our symposia and send news to us for use in the newsletter.

WHITE PROCAMBARUS ALLENI IN FLORIDA -- Ross B. Socolof (P.O. Box 1987, Bradenton, Florida 33506 USA), a noted hobby fish culturist notes that the white morph of *P. alleni* is relatively 'common' in southern Florida but is not commercially available. He has also encountered a cobalt blue morph. *P. alleni* is abundant in the Everglades region of Florida and is a bit of a nuisance in tropical fish production ponds in the state.

PACIFASTACUS LENIUSCULUS IN GREAT BRITAIN -- IAA member Stephen Goddard (Hampshire College of Agriculture, Sparsholt, Winchester SO21 2NF, Great Britain) sent the following information about *P. leniusculus* to Ossi Lindqvist (Univ. of Kuopio, Kuopio, Finland) earlier in the year. '...In general terms, there is no doubt that *Pacifastacus* is becoming 'successfully' established in Britain. With my students I am monitoring several populations now established in flooded gravel pits in Southern England. Populations have increased rapidly to the point that sport fishing on some sites has been rendered impractical following the destruction of weed cover and fish spawning areas. A number of waters are never populated with *Pacifastacus* and they are being freely moved from water to water. The 'plague' as you know is established in Britain and in 1985 we had the first authenticated records of established populations of *Pacifastacus* in the river systems. We can now only speculate as to their future role in the ecosystem....'

CRAYFISHES IN BRAZIL -- Prof. Dr. Ludwig Buckup (Dep. Zoologia-Inst. Biociencias, Univ. Fed. do Rio Grande do Sul, Av. Paulo Gama, s/n, 90040-Porto Alegre-RS, Brazil) sends the following information. '...the Brazilian Parastacidae occur only in the two southernmost States (Rio Grande do Sul and Santa Catarina), where colder and fast running waters suit their environmental preferences. Parastacidae are absent in the Brazilian tropics.

'Our crayfishes certainly have great suitability for culture. I am working intensively, together with my wife and colleague Georgina Bond Buckup, on a project related to the culture of *Parastacus varicosus*, a local species that shows great tolerance to confinement. As you have mentioned I heard about *Procambarus clarkii* being exploited in Sao Paulo. I heard that it is only a case of minor scale exploitation. The crayfishes are sold by aquaria-dealers to be kept as a hobby....' See the New Literature section for a taxonomic reference by Prof. Buckup dealing with Brazilian parastacids.

PROCAMBARUS CLARKII ON CYPRUS -- Correspondence from the Department of Fisheries, Ministry of Agriculture and Natural Resources, Nicosia, Cyprus, confirms the establishment of breeding populations of *P. clarkii* on Cyprus. They were initially introduced in 1983 from Singapore by people dealing with ornamental fish for use in aquaria. They are said to be quite popular now as pet animals and food.

PROCAMBARUS CLARKII IN ZIMBABWE -- Zimbabwe has issued at least one permit for culture of *P. clarkii*. Holder of that permit is Mr. Don Matson (Guruve, Zimbabwe) who has imported 1000 adults from Livingstone, Zambia.

CHINESE ASTACOLOGIST REQUESTS HELP -- Shu Xinya (Hubei Province Fisheries Research Institute, No. 18 East Lake Road, Wuhan City, Peoples' Republic of China) wishes to exploit and culture feral Chinese stocks of *P. clarkii*. Prof. Xinya requests advice on locating funds, interest free loans, equipment, technology, training, export contacts, etc. Interested parties should write directly to Prof. Xinya.

WORLD AQUACULTURE SOCIETY -- (1) This 15 year old organization has 2000 members from 80 countries and two affiliate organizations, the European Aquaculture Society and the Aquaculture Association of Canada. Membership is \$30 U.S. and includes the quarterly Journal of the World Aquaculture Society, a quarterly newsletter, and a directory of aquaculturists. Address inquiries to: World Aquaculture Society, 341 Pleasant Hall, LSU, Baton Rouge, Louisiana 70803 USA. (2) The annual meeting of the World Aquaculture Society will be held 18-23 January 1987 at the Simon Bolivar Convention Center in Guayaquil, Ecuador. Tours to shrimp aquaculture facilities will be available. Special air fares are available for travelers leaving from the USA. Address inquiries to the WAS office.

WASTE WATERS FROM CRAYFISH PROCESSING PLANTS -- The following paper was presented at the June 29 - July 2 1986 meeting of the American Society of Agricultural Engineers in San Luis Obispo, California USA. Bankston, J. D., T. B. Lawson, and R. P. Romaine. Characterization of wastewater from two crayfish processing plants. For information, contact T. B. Lawson, Dept. Ag. Engineering, Louisiana State Univ., Baton Rouge, Louisiana 70803 US

THE CRUSTACEAN NUTRITION NEWSLETTER -- This newsletter is intended to coordinate efforts to develop effective crustacean feeds. Editors are J. D. Castell and J. C. Kean. Contents in Vol. 3, No. 1 are: History of Newsletter; Future of Newsletter; Activity Update; Letters to the Editor; Report to the Symposium on Standard Reference Diet for Crustacean Studies; Report of Several Topic Sessions: Current Problems and Recent Developments in Aquaculture Nutrition; Outline for Proposed Collaborative Protein/Energy Study; Discussion of Special JWAS Publication; Other Crustacean Feed Developments; Marine Lobster Pricing Information and Order Form; Diet Formulation Information; and Mailing List. For information write to the editors at: Dep. of Fisheries and Oceans, Fisheries Research Branch, Fisheries and Environmental Sciences Division, Halifax Fisheries Research Laboratory, P.O. Box 550, Halifax, Nova Scotia, Canada B3J 2S7.

MEETINGS ON CRAYFISH -- (1) Aquaculture Field Day 1987 -- Louisiana State University (LSU) will sponsor an Aquaculture Field Day on 2 May 1987. This meeting will feature research and development at LSU's major facility that features the largest warm water crayfish research program in the world. For information, contact Dr. Robert P. Romaine, School of Forestry, Wildlife and Fisheries, Louisiana State University, Baton Rouge, Louisiana 70803 USA. (2) Prawn '87 -- A five day program dealing with aquaculture of prawns and shrimps and other species including crayfish and catfish is being organized for 4-10 May 1986 in New Orleans Louisiana USA. To be called Prawn '87, it will include technical sessions for 8 hours daily with trade shows to be held on 9-10 May. Organizer is Karl D. Matsumoto. Address is: International Shrimp Research Center, P.O. Box 53424, New Orleans, Louisiana 70153-3424 USA. Telex is: 587388 HQ NLN.

(3) Crayfish Meetings in Louisiana, February 1987 -- The Louisiana Crayfish Farmers' Association (LCFA) will sponsor its annual meeting during the day on 27 February 1987 and the Fourth Annual International Crayfish Tasting and Trade Fair during the evening of 27 February and during the day and into the evening of 28 February. The LCFA meeting will feature seminars for farmers, processors, food editors, jobbers, distributors, etc. Theme of the tasting and trade fair is "Louisiana Crayfish: Heads and Tails Above the Rest". Louisiana is the largest producer of warmwater crayfishes, accounting for over 80 % of the world's supply of freshwater crayfishes. These meetings will afford anyone interested in this industry with the opportunity to see it first hand. The meetings will be held in the Lafayette, Louisiana Cajundome. Official host hotel is the Lafayette Hilton which will provide special rates for participants [specify that you will attend the meeting to obtain reduced rates]. Further information may be obtained from Ms. Tammy Dauterive, Louisiana Crayfish Farmers' Association, P.O. Box 91544, Lafayette, Louisiana 70509 USA, Phone, Area Code 318, Number 235-7072.

NEW LITERATURE ON CRAYFISH BIOLOGY --

Hobbs, H. H., Jr. and R. Franz. 1986. New troglitic crayfish with comments on its epigeal and other hypogean crayfishes of Florida. Journal of Crustacean Biology 6:509-519.

Buckup, L. and A. Rossi. 1980. O genero *Parastacus* no Brasil (Crustacea, Decapoda, Parastacidae). Rev. Brasil. Biol. 40(4):663-681.

Lodge, D. M., T. K. Kratz, and G. M. Capelli. 1986. Long-term dynamics of three crayfish species in Trout Lake, Wisconsin. Canadian Journal of Fisheries and Aquatic Sciences 43:993-998.

Lodge, D. M., A. L. Beckel, and J. J. Magnuson. 1985. Lake-bottom tyrant [*Orconectes rusticus* in Wisconsin USA]. Natural History 8/85:32-37.

Westin, L. and P. Gydemo. 1986. Influence of light and temperature on reproduction and moulting frequency of the crayfish, *Astacus astacus* L. Aquaculture 52:43-50.

Huner, J. V. and S. Naqvi. 1984 (released 1986). Invertebrate faunas and crayfish food habits in Louisiana crayfish ponds. Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 38:395-406.

Huner, J. V. 1986. Australian crwfish. Farm Pond Harvest 20(3):13-14 & 26.

Ogilvie, D. M. No Date. Trial harvesting and marketing of Ontario crayfish. Prepared for Clearwater Bait, Inc., Warton, Ontario. 15 pp. [RE: Dep. Zool., Univ. of Western Ontario, London, Ontario, Canada N6A 5B7].

Ogilvie, D. M. No Date. Catch efficiency and retentive ability of experimental crayfish traps. Prepared for Clearwater Bait, Inc., Warton, Ontario. 18 pp. [RE: Dep. Zool., Univ. of Western Ontario, London, Ontario, Canada N6A 5B7].

Morrissy, N. 1986. Bibliography for *Cherax tenuimanus*, marron. [58 references]. Marron Growers Bulletin [Perth] 8(1):13-16.

Dellenbarger, L., K. Roberts, S. Kelly, and P. Pawlyk. 1986. An analysis of the Louisiana crayfish processing industry and potential market outlets. Dep. Ag. Economics, Louisiana State Univ., Baton Rouge, Louisiana 70803 USA.

Lake, P. S. and A. Sokol. 1986. Ecology of the yabby *Cherax destructor* Clark (Crustacea: Decapoda: Parastacidae) and its potential as a sentinel animal for mercury and lead pollution. Tech. Paper No. 87, Australian Govt. Pub. Service, Canberra. 186 pp.

Appelberg, M. 1986. The crayfish *Astacus astacus* L. in acid and neutralized environments. Doctoral dissertation at University of Uppsala, Sweden.

DeViliez, E. J. and D. J. Fyler. 1986. Isolation of hepatopancreatic cell types and enzymatic activities in B cells of the crayfish *Orconectes rusticus*. Can. J. Zool. 64:81-83.

Layne, J. R., Jr., M. L. Manis, and D. L. Claussen. 1985. Seasonal variation in the time course of thermal acclimation in the crayfish *Orconectes rusticus*. Freshwater Invert. Biol. 4(2):98-104.

Walls, J. G. 1985. Distribution and natural history of the crawfish *Orconectes difficilis* (Decapoda: Astacidae) in Louisiana. The Southwestern Naturalist 30(2):189-194.

Stark, G. J. and J. B. Layzen. 1986. Spatial distribution of crayfish in Mill Creek, Davidson County, Tennessee. Assoc. Southeastern Biol. 33(2):88 (abstract).

CRAYFISH ETOUFFEE RECIPE -- Ingredients: 1 1/2 tablespoon flour; 1 stick butter; 3/4 cup chopped celery; 3/4 cup chopped white onion; 3/4 cup chopped bell pepper; salt, black and red pepper to taste; 1 pound crayfish tails; 1/2 cup chopped green onions; 1/4 cup chopped parsley. Instructions: Make a light roux with flour and butter. Add celery, onion, and bell pepper. Saute until vegetables are transparent. Add seasoning and crayfish, mix well. Place lid on pot and let steam for 15 minutes on low heat. Add green onion and parsley and let set about 5 minutes off heat. Reheat just before serving. Serve over rice. Serves 6. Source: Louisiana Crayfish and Company brochure, Catfish Town Market Place, 100 St. James St. B-221, Baton Rouge, Louisiana 70802 USA.

L'ASTACICULTEUR DE FRANCE -- This is the Bulletin publie' par l'Association des Astaciculteurs de France. Bulletin N°7, Juin 1986 includes the following articles: L'ecrevisse et le Legislateur, G. Amato; Les tribulations d'un candidat a l'Astaciculteur, C. Ruhlman; Les ecrevisses au Pay des Bayous, G. Francois; Les mangeurs d'ecrevisses europeens vus par les Cajuns de Louisiane, Extrait d'un article du Sunday Magazine; La pecheaux ecrevisse en Pologne, J. Laurent; Les ecrevisses au Japon, J. Laurent; and Assemblee Generale du 6 Mars 1986. For information, contact G. Francois, Les Clouzioux, Brinon sur Sauldre, F-18410 Argent Sur Sauldre, FRANCE.

IAA REFERENCED IN JAPAN -- The Japanese Journal, Collecting and Breeding, vol. 48, no. 6, 1985, pp. 232-262, features a special report on zarigani (crayfish) edited by Professor A. Omori (Research Laboratory of Fisheries Resources, Tokyo University of Fisheries, 4-5-7, Kunan, Minato-ku, Tokyo, 108, Japan) and authored by Miyake, Hiruta, Yokoi, Kume, Modegi, and Omori. The text is in Japanese but features several beautiful color plates on *Procambarus clarkii* life history with an excellent cover color plate of that species. Professor Omori includes a short article about IAA and lists a number of members as resource persons for people interested in obtaining more information about astacology.

CRAYFISH FISHERIES IN CANADA -- *Cambarus robustus* has been fished on an experimental basis as a food item for two years now in the Lions Head, Ontario region. Organizer is John E. Court (Box 221, Lions Head, Lions Head, Ontario, Canada N0H 1N0. Mr. Court indicates that there is good potential for sales to restaurants, hotels, etc. and that there is modest potential for imports. Two papers describing the fisheries are referenced in the New Literature section of this newsletter.

ENVIRONMENTAL EFFECTS ON MOLTING AND REPRODUCTION IN NOBLE CRAYFISH -- Lars Westin and Rolf Gydemo (Askö Laboratory, Box 58, S-150 13, Trosa, Sweden) continue studies on reproduction and molting in *Astacus astacus* (a recent paper is cited in the New Literature section of this newsletter). They note, "...In a recent experiment, males and females were placed in warm water after the normal mating season. Most females shed their eggs. Moulting took place and they were brought back to low water temperature (natural water temperature) in early May. After having been separated, both sexes were put together. The water temperature was rising and the photoperiod increasing. Matings took place at a water temperature of approx. 15° and a photoperiod of about 16L:8D. We are now waiting to see the outcome of these matings. Anyway, this further supports the idea of temperature being the major cue in molting as well as in mating...."

MORE ON ORCONECTES NAIS IN KANSAS (USA) -- Harold Klaassen (Div. of Biology, Kansas State Univ., Manhattan, Kansas 66506 USA) sends more information on biology of *O. nais* and its suitability for culture. 'It [*O. nais*] is very abundant throughout Kansas. It is the species that our fish growers are selling. From what I have read it gets as large as the southern species, the adults typically being between 3-4 inches [7.5-10 cm] in length. Our growing season here in Kansas is very different from the south. From mid October to mid April the water is so cold nothing grows. *O. nais* is well adapted to ponds of this region. It mates probably in winter, lays eggs in March, and hatches in May. Bait size young are available from June to October. Eating size ones are possible in fall and spring. *O. nais* is generally a non-burrower, which I think can be an advantage here where the production has to take place in the summer and in ponds that can't be drained. Now many fish growers are not draining their ponds to conserve water. There are a lot of things we need to study yet before *O. nais* can be cultured consistantly....'

KRAFTOOLING I DAMMAR [Crayfish Culture in Dams] -- This interesting Swedish article by IAA member Magnus Fürst appears in "Information från Sövatens-Laboratoriet Drottningholm [Sweden] Nr. 3 1986. The illustrations and figures will be useful to non-Swedish readers, especially those in northern Europe who wish to establish perpetuating populations of crayfish in small bodies of water.