

INTERNATIONAL ASSOCIATION
OF ASTACOLOGY
I. A. A.



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NEWSLETTER

COMMUNICATIONS FROM MEMBERS

President Stellan Karlsson, on behalf of the IAA, has accepted to meet with the American Society of Zoologists in 1983 and 1984.

Aquaculture '83 met from January 9-13, 1983 at the Washington Hilton in Washington D.C. and was sponsored by the World Mariculture Society, the Shellfish Institute of North America, and several other organizations. IAA member Fred CONTE is President-Elect of the World Mariculture Society and Jim AVAULT has served as president.

C.J. GRUBB (P.O. Box 60287, Livingstone, Zambia) reports on the beneficial results of polyculture of Procambarus clarkii with Tilapia. He notes that populations of Tilapia are kept to a reasonable level for food growth when a large population of P. clarkii are present. When P. clarkii populations are substantially reduced by harvesting, a population explosion of Tilapia results and too many small fish survive. The situation is reversed when P. clarkii population levels increase. He remarks that "freshwater crayfish in Zambia have a good market and it seems a good future in that country."

Pierre LAURENT observes that France still imports crayfish and national production for consumption "is about zero." He notes that following publication of several popular books on crawfish culture, many individuals thought they might become wealthy in short time by raising crayfish. The many trials to raise native and exotic species have been unsuccessful. He suggests that from all these efforts, France has probably gained new species which escape from ponds and became established elsewhere. Pierre points out that production of juveniles is much more effective with at least three farms in France hatching Astacus astacus, Astacus leptodactylus, Pacifastacus leniusculus. New regulations are forthcoming, and acclimatizations will be strongly limited to closed basins. In addition, in the near future no living Procambarus will be accepted at French borders and only cooked or frozen Procambarus can enter.

Jerry WALLS (p.O. Box 42, Highstown, N.J. 08520) would like to purchase reprints of any papers by Rendell Rhoades before 1962. He is especially interested in the "Crayfishes of Kentucky."

Steve SHIMIZU has completed his masters degree at the Univeristy of California at Davis and plans to begin a crayfish marketing company in the Los Angeles area. Steve, one of Charles GOLDMAN'S students, operated the boat for Cliff's Marina at Sacramento; the boat was used to take participants of the IAA on a harvest of Pacifastacus in the Sacramento River. Congratulations Steve!

David TAMAYO operates California Crayfish in Oakland and reports that he is trying to bring Procambarus clarkii from Louisiana by air freight. He experiences mortality rates of 20 to 80% upon arrival and notes that the shelf life of P. clarkii has also been poor (ca. 20% loss the day following arrival). David requests any information relevant to this problem.

OTHER COMMUNICATIONS

FRANCE

Some fifteen French scientists are studying crayfish. Jacques ARRIGNON and Pierre LAURENT have compiled a 20 year bibliogranhv of crayfish studies in France. The work contains 119 titles and will be published next summer for the Congress of the International Society of Terminology! (laurent)

French astacologists and crayfish farmers are meeting once each year under the leadership of "Association des Astaciculteurs de France."

SOME RECENT LITERATURE

"The White Prince" by Petr Taborsky in: Tropical Fish Hobbyist, August, 1982. Vol 30, pages 8-13.

(The article describes an albinistic form of Procambarus alleni, contains several nice color photographs, and discusses possible use of these forms as aquarium specimens.)

OTHERS

Vareille-Morel, C. and C. Chaisemartin. 1982. Approche des mecanismes de la tolerance naturelle et de l'acclimatation aux metaux lourds (Cr et Pb) chez differentes populations d'Austropotamobius pallipes. (Le.). Acta OEcologica/OEcologia Applicata. 3: 105-122.

I. A. A.
FINANCIAL REPORT
AS OF APRIL 30, 1983

INCOME:

BALANCE BROUGHT FORWARD (LAURENT)	\$1,434.86
164 MEMBERSHIP DUES*	3,175.00
SALE OF 75 IAA PINS	254.47
INTEREST ON BANK ACCOUNT	180.17
TOTAL INCOME	5,044.50

EXPENSES:

PLAQUES AND ENGRAVING	218.76
RECEIPT BOOK	9.33
ACCOUNT BOOK	1.67
DEBIT FOR CHECK BOOK	13.55
OFFICE & SHIPPING SUPPLIES	29.34
RUBBER STAMP AND PAD	11.87
POSTAGE FOR <u>NEWSLETTER AND</u>	
CORRESPONDENCE	375.69
PRINTING COSTS	436.28
DEBIT FOR COLLECTION OF FOREIGN	
CURRENCY	44.70
PAYMENT TO PIERRE LAURENT FOR	
EXPENSES INCURRED IN MAILING	
<u>NEWSLETTER TO EUROPEAN MEMBERS</u>	255.00
TOTAL EXPENSES	1396.19

BALANCE ON HAND	\$3,648.31
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*NOTE: THE NUMBER OF MEMBERSHIPS AND AMOUNT OF MONEY FROM MEMBERSHIP DUES INCLUDE TWO UNKNOWN PERSONS. ONE CHECK IN U.S. DOLLARS CAME FROM A BANK IN SOUTH WALES; THE OTHER, FROM A BANK IN THE NETHERLANDS.

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SHORT RESEARCH COMMUNICATIONS

Cambarus diogenes and Fallicambarus fodiens are the primary burrowing crayfish species in northern Ohio. Night collecting is an efficient method of obtaining specimens, but often the crayfish is discovered at the entrance to its burrow and grabbing by hand results in no specimen or only a severed cheliped. I have found that a garden trowel, quickly pushed into the ground, in such a way that it will block the burrow and hence the retreat, will allow leisure collection of specimens. (from Jim Norrocky)

Overwinter Growth and Survival of Young-of-the-Year Channel Catfish (Ictalurus punctatus in South Louisiana with Notes on Crawfish (Procambarus spp.) Harvest

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Channel catfish fingerlings, 5-7 inches long and 120 days old, were stocked in 0.035 acre earthen ponds at rates of 714 (3-unfed), 1428 (4-fed), 3228 (4-fed), and 5714 (4-fed) per acre on 24 Sep. 1980. These ponds had resident crawfish populations. They had been filled with water throughout the previous summer. (Crawfish ponds are normally dry in the summer). Thus, there was no emergent vegetation in the ponds to serve as food and protection for the crawfish. Many ponds were contaminated with green sunfish. Fish were fed to satiation daily with floating (35% protein) feed while temperatures exceeded 65°F in the fall (mid-Dec.). This feeding schedule was resumed in mid-Mar. when temperatures exceeded 65°F. During the cold period, fish were fed sinking feed (35% protein) at an estimated 1% of body weight on alternate days. Fish were harvested 9-10 Jun. 1981.

The purpose of this study was to determine if we could grow catfish to harvestable size (3/4 lb) in 365 days from hatching. Crawfish were harvested as an afterthought. Table 1 summarizes growth, survival, and food conversion information. We did not achieve our goal although 8% of the fish in the two lower, fed treatments did reach 3/4 lb. Growth was density dependent. Interpretation of our results is complicated, however, by the smaller initial size of the fish stocked at 5714 per acre. Survival was uniform at the three lowest stocking densities but dropped dramatically at the highest density. Food conversion values paralleled stocking rates in fed ponds. Fish were overfed. This contributed to poor water quality and problems with protozoan parasites in the spring. All ponds but the unfed ones and one fed one were treated with potassium permanganate 3-6 times during the spring. Stressed fish fed poorly for several days before and after treatment. Spring dissolved oxygen levels were frequently above saturation in the late afternoon reflecting rich phytoplankton communities in ponds with relatively low fish biomasses. Ponds leaked badly and were normally 2-3 feed deep. Diamond back water snakes were a constant problem in the spring. We feel that the fish would have performed better if the physical environment had been less stressful.

Crawfish production (Table 2) was good by most Louisiana standards, generally averaging above 500 lb per acre. Poor production was correlated primarily with the presence of 2-5 inch green sunfish during the Dec.-Mar. period not catfish stocking density. This was the period when most young crawfish hatched. Catfish in the lowest density (fed) ponds may have consumed young crawfish but those same ponds were heavily contaminated with green sunfish. Also, catfish, regardless of stocking density, were fairly uniform in size during the Dec.-Mar. period. Crawfish were not especially large and only 70% were of an edible size. Excess feed did not improve crawfish production dramatically as unfed control ponds had production similar to that of overfed high density catfish ponds. Seining was the most efficient method for harvesting crayfish, especially small ones.

Table 1. Young-of-the-Year Channel Catfish Growth and Survival Over Winter in South Louisiana.

Trt.	Mean Size (OZ)		Date			% Survival	Food Conversion
	09-24	01-09	02-27	04-03	06-09		
714/ac	1.04(3)*	2.02(2) (0.12)**	2.14(3) (0.19)	2.74(3) (0.78)	3.38(3) (0.73)	76(3) (20)	---
1428/ac	1.00(4)	2.80(3) (0.20)	3.20(3) (0.31)	4.35(3) (0.31)	7.76(4) (1.1)	76(4) (6.3)	2.06(4) (0.58)
3228/ac	1.04(4)	2.84(4) (0.21)	3.35(4) (0.71)	4.45(4) (0.39)	6.07(3) ¹ (0.72)	72(3) (11)	2.66(3) (0.53)
5714/ac	0.80(4)	2.13(4) (0.74)	2.30(4) (0.66)	2.41(4) (0.97)	3.32(4) (0.84)	56(4) (7.8)	7.21(4) (3.58)

*Number of ponds; **Standard Deviations; ¹One pond lost in May after being filled with deoxygenated well water from a broken pipe.

Table 2. Relationships between Crawfish Harvest and Fish Densities

Rank-Pond	Crawfish lb/ac	No. Green Sunfish Dec.-Mar.	Catfish- No. Stocked/ No. Harvested/ac	Final Catfish Size (oz)
1 - 12	1063	0	3228/ 914	3.4
2 - 13	1003	2	5714/3000	3.4
3 - 17	1000	1	5714/2634	3.1
4 - 10	932	32*	714/ 543	2.9
5 - 18	920	3	714/ 400	3.1
6 - 5	902	10	714/ 686	4.2
7 - 9	893	0	3228/2000	5.5
8 - 8	849	0	3228/2714	5.9
9 - 14	838	761**	5714/3457	2.4
10 - 11	719	119	3228/2229	6.9
11 - 2	617	541	5714/3600	4.4
12 - 16	567	300	1428/ 971	6.4
13 - 15	385	439	1428/1057	9.0
14 - 1	289	630	1428/1171	8.0
15 - 3	169	"79"***	1428/1143	7.6

*These were too small to prey on small crawfish; **A large number of young crawfish recruited to this pond after the bulk of the green sunfish were removed by seining. ***This pond could not be seined so this number represents only those green sunfish caught in one crawfish trap. This pond had the highest density of green sunfish of any pond.

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