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# Crayfish NEWS

Vol.25 No.2 March 2003

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## THE STATUS OF CRAYFISH IN IRAN



Using traps to harvest Caspian Sea crayfish

**By Mohammad Karimpour**

Vladykov (1964) reported that on the Iranian coast of the Caspian Sea and in water bodies of the north of Iran there are two crayfish species, *Astacus leptodactylus* and *Astacus pachypus*. Bottcher (1971) carried out some research on *A. leptodactylus* in the Anzali lagoon. Since then there has been little information about crayfish in Iran. More

recently some biological surveys of Anzali lagoon crayfish (*Astacus leptodactylus*) were carried out by Karimpour *et al.* (1989) in 1987. In 1990 the MSY of Anzali lagoon crayfish was determined using mark and recapture methods (Karimpour *et al.*, 1991) and the fecundity of crayfish of the Arass water reservoir was determined (Karimpour &

*(Continued on page 3)*



The International Association of Astacology (IAA), founded in Hintertal, Austria in 1972, is dedicated to the study, conservation, and wise utilisation of freshwater crayfish. Any individual or firm interested in furthering the study of astacology is eligible for membership. Service to members include a quarterly newsletter, membership directory, bi-annual international symposia and publication of the journal *Freshwater Crayfish*.

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Statements and opinions expressed in *Crayfish News* are not necessarily those of the International Association of Astacology

### President's Corner

It is my great pleasure to write to you after a year into my two-year term as President of IAA. It has been a busy year for me as I'm sure it has been for all of you!

The European CrayNet supported by the European Commission is now fully operational with their first meeting in Ireland this June 22-24. We look forward to hearing from this group! The CrayNet has a website for you all to visit at <http://labo.univ-poitiers.fr/craynet/>.

I had the opportunity to visit the site of the IAA 15 meeting in London this past February. The hotel is central to all kinds of excellent activities in London and the Zoological Society provides first rate meeting facilities and an exceptional Zoo. I encourage you all to mark March 29 – April 2, 2004 for IAA 15 in London. We will enjoy exceptional talks at the Zoological Society of London with a final day at the Linnean Society. There are tentatively scheduled post conference trips to the South of England, Wales, and Derbyshire on the 3<sup>rd</sup>-5<sup>th</sup> of April. And, of course, there is no shortage of fun to be had in London itself. I look forward to seeing you all at our next meeting.

Finally, I would like to end my corner by saying that the IAA is in good health. Our website is being extensively redone and we hope to have it posted within a month or two. This new website will have extensive information on freshwater crayfish, including back issues of the Crayfish News and out of print issues of *Freshwater Crayfish* as well as tables of contents of other issues. We hope to provide a user friendly and useful website for the association. Once it is up and running, we will send out a general announcement to the membership. At that time, I welcome feedback, both positive and constructive suggestions, on the website as well as contributions and suggested links to other sites of interest to crayfish folks. I thank you all for your support of our fine organization and hope to see you all in London next spring!

**Keith A. Crandall**  
 IAA President

### B.F.P.P. N° 367 (2002-4)

### Knowledge and management of aquatic ecosystems

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#### DIVING FOR CRAYFISH

Stony Cove (a deep water-filled quarry) in England used to train divers is inhabited by large numbers of white-clawed crayfish, *Austropotamobius pallipes*. Member, **Peter Sibley**, encounters one on his first ever dive (above).

#### CRAYNET (cont'd)

The main aims are:

→To encourage dialogue between all workers on crayfish

→To discuss technical problems: (e.g. observational or sampling methods, taxonomic problems, research programmes), administrative procedures, legislation problems and many others....

→To publish calls for collaborations

→To prepare and foster thematic meetings, seminars, concerted actions, training stages and Summer schools at local, regional or national level about particular topics in astacology.

If you are interested in this forum, you can first inform us to [pnoel@mnhn.fr](mailto:pnoel@mnhn.fr) and Cc: [craynet@univ-poitiers.fr](mailto:craynet@univ-poitiers.fr) and as soon as it will be open, you will receive how to subscribe to it.

#### LITERATURE OF INTEREST TO ASTACOLOGISTS

1. Coghlan, A. (2003). Crayfish clones poised to invade Europe. *New Scientist*, 177(2383): 8.
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(Continued from page 1)

Hosseinpour, 1998). Mantifar (1999) gives details of the biological characteristics of *A. leptodactylus* in Anzaly lagoon.

The population dynamics and MSY of the crayfish of the Arass water reservoir was investigated by Karimpour & Hosseinpour (1999) and in the 2001 for the first time I started a project for determining the biological characteristic of Caspian Sea crayfish. I sent some samples to Dr David Rogers who confirmed them to be *Astacus leptodactylus*. This species is found at depths of 20-100 m, but the main distribution is between 30-70 m, with a salinity 10-12 ppt (Karimpour, 2002). In 1993 the monitoring program for stocks of crayfish in Arass water reservoir started and is still underway (Karimpour, unpubl.).

Tables 1 and 2 display biological and production data for *A. leptodactylus* in Iran.

Finally, it should be noted that for religious reasons the crayfish is not consumed domestically.

**EDITORIAL**  
 Thanks to those members who have submitted articles for the newsletter. When sending pictures or graphics the preferred format is JPG (around 200KB is large enough). Please continue to send contributions to David Holdich at: [david.holdich@ntlworld.com](mailto:david.holdich@ntlworld.com)

A reminder to send any anecdotes or photographs from IAA 12, 13 or 14 to David or Glen for possible inclusion in the IAA History Book, which will be launched in London next year.

**Glen Whisson  
David Holdich**

#### References:

- Botcher (1971). Anzali crayfish project preliminary report. Fisheries Research Institute of Iran. Bandar Anzali, Iran.
- Karimpour, M. (2002). Biological characteristics of Caspian Sea crayfish *Astacus leptodactylus* in south-west of Iranian coast (Anzali region). Caspian Sea Bony Fishes Research Center, Bandar Anzali, Iran. (In Farsi).

(Continued on page 4)

**Table 1.** Some biological data for the crayfish, *Astacus leptodactylus*, in Iran

Source	1	2	3	4	5	6	7	8	9
Al	102	-	6 May-6 Nov	-	-	-	92-412	221	84-121
Ar	120.5	54.7	6 Jun-6 Dec	141-889	420	87-164	112-876	322	81-153
CS	125.6	60.6	20 Jul-20 Jan	159-485	309	97-159	119-394	255	103-152

Al : Anzali lagoon, Ar: Arass reservoir, CS: Caspian Sea.

1 : Average length (TL) mm, 2: Average weight g, 3: Catch season, 4: Range of ovarian eggs, 5: Average of ovarian eggs, 6: Range of length for females with ovarian eggs, 7: Range of pleopodal eggs, 8: Average of pleopodal eggs, 9: Range of length for females with pleopodal eggs.

**Table 2.** Production (kg) of *Astacus leptodactylus* in Iran

1988	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
11300	3200	4500	3100	11700	17300	32500	84700	175400	175200	180300



Karimpour, M. Monitoring of crayfish stocks of Arass water reservoir. Unpublished report.

Karimpour, M. & Hosseinpour, S.N. (1998). A preliminary study on fecundity of freshwater crayfish *Astacus leptodactylus* in Arass water reservoir. *Iranian Journal of Fisheries Sciences*, 1 (2): 1-9.

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Mantifar, A. (1999). Characteristics of Anzali Lagoon crayfish *Astacus leptodactylus*. *Freshwater Crayfish*, 12, 937.

### Crawfish farmer raves over harvest

Gannett News Service - April 27, 2003

LAWTELL — Farmer Duane Smith rates the 2003 crawfish catch as the best he has seen in the last three years. "It has not been the best on prices, but the best on quality and quantity for me," he said. "If crawfish are big, it really helps with selling them."

This is the best season in the last 10 years for most farmers, said Mark Shirley, regional aquaculture specialist with the LSU AgCenter in Abbeville.



Caspian Sea crayfish, some of them covered by a *Balanus* sp.

Vladykov, V.D. (1964). Inland fisheries resources of Iran, especially of the Caspian Sea with special reference to Sturgeon. Report to government of Iran. FAO report No. 1818. FAO, Rome.

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E-mail: mohammad\_karimpour@yahoo.com

With April being the height of the season, Shirley said crawfish average 80 cents per pound, but can run as low as 60 cents in some places. The price for crawfish depends on the size and weight of the crawfish. The bigger the crawfish, the more expensive they are, Shirley said. The lower price for crawfish means more hours for the workers at Duane's Crawfish Farm.

Good crawfish production is helping farmers this season to offset the low prices experienced with rice, Shirley said. Shirley oversees the production of crawfish in Vermilion, St.

### FIRST CRAYNET MEETING:

The endangered native crayfish: *Austropotamobius pallipes*. Bioindicator and heritage species" Kilkenny, Ireland, 22 - 24 June 2003.

The aim is to bring together crayfish researchers and managers, to identify necessary research for a common approach to management techniques, and to develop recommendations for optimal management strategies at a European scale. The specific objective of this meeting is to define the status of *Austropotamobius pallipes* as cultural heritage and endangered species. The programme is available on the craynet website (<http://labo.univ-poitiers.fr/craynet/>).

### SECOND CRAYNET MEETING:

Socioeconomic and cultural aspects in European native crayfish with a special focus on *Astacus astacus*: links between conservation and use" Oslo, Norway, 1-4 September 2003.

The aim is also to bring together crayfish researchers and managers, to identify necessary research for a common approach to management techniques, and to develop recommendations for optimal management strategies at a European scale.

The specific objective of this meeting is to focus on the cultural and socioeconomic significance of the noble crayfish, *Astacus astacus*, and the important link between conservation and use.

The conference registration and abstract deadline is July 1 and the acceptance of oral communications and posters on July 15. The registration form is available on the craynet website (<http://labo.univ-poitiers.fr/craynet/>).

### REQUEST FOR INFORMATION

Matt Hyatt from the Arizona Game and Fish Department sent the following request for information"

I was recently hired by the Arizona Game and Fish Department (Research Branch) to conduct a literature review on crayfish control technology encompassing mechanical, biological, and chemical controls. The objective of this project is to provide a thorough, up-to-date knowledge base of crayfish control techniques. If any readers have any relevant information (studies, papers, citations, etc.) on attempts to eradicate or control non-native crayfish populations I would appreciate a copy.

Thanks for the help

Matt Hyatt  
Fisheries Research Biologist  
Arizona Game and Fish Department  
Wildlife Management Division/Research Branch  
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### CRAYNET FORUM:

We are pleased to announce the opening of an electronic forum on European crayfish created at the end of May to provide much-needed communication links between the different stakeholders involved in crayfish management and study. It will particularly concern workers:

→In the field (crayfish farmers, managers of aquatic systems, natural history societies....)

→In administration

→In Universities and scientific laboratories (researchers, limnologists...)





#### A NICE CRAYFISH

IAA member **Paolo Bazzoni** of Italy has sent in this photograph of a normal and a blue coloured *Austropotamobius italicus*. The blue one, at least is a berried female from the wild. Paolo says that he has seen blue noble, Turkish and signal crayfish but never a blue white-clawed crayfish. Has anybody else recorded blue specimens of this species? What is the cause – as it comes from the wild it is unlikely to be diet.

Contact: Paolo Bazzoni; email: [ossolana.acque@libero.it](mailto:ossolana.acque@libero.it)

Craynet will emphasize knowledge-based management strategies and a common European approach to management techniques; it will also develop the links between researchers, managers and sustainable policies for development, through rural agencies and regional programmes.

Craynet aims to establish for the first time a network of aquatic crayfish researchers and managers (“stakeholders”) to:

→Identify trends in land use and consequent water in European waters, and their probable impact on biodiversity, as assessed by bio-indicators (crayfish are powerful bio-indicators for water quality and are also

keystone species controlling ecosystems);

→Discuss ways to harmonise national and regional legislation and to improve it at European level;

→Identify research needed to solve management problems in crayfish survival and habitat and water quality protection;

→Prepare handbooks on crayfish management solutions – bio-monitoring protocols; wise recreational use of native and alien species;

→Produce publicity (website, documents, videos) aimed at stakeholders and the general public.

Landry, Acadia and Evangeline parishes. At the Lawtell farm, about 600 to 1,000 sacks of crayfish are processed daily. Smith not only has a crayfish pond, but he also processes and distributes the crayfish at his 1,000-acre farm east of Lawtell.

“Some of our product is brought to New Orleans, but the majority is shipped to Mississippi. We also cater them,” Smith said. He has been in the crayfish business since 1983.

Smith is not the only crayfish farmer who is prospering this year. The 2002-03 crayfish crop has been good for most farmers in the area, Shirley said. “This has been a big volume year for most farmers,” he said.

The season usually ends in May, but this year farmers plan to continue to harvest crayfish until June. April is the height of the season.

“We had plenty of rain during last summer, and in the fall and winter. That helped in the natural production cycle to generate a lot of crayfish and to help grow them,” Shirley said.

Farmers start harvesting in November and December. “Ponds have produced well since early in the season and are continuing to do well. We will have a good supply through May and into June,” Shirley said. He said he is not sure what next season will be like. “If rain fall continues next year. It should be just as good,” he said.

Source: <http://www.growfish.com.au/Grow/Pages/News/2003/apr2003/69703.htm>

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#### New identification leaflet

“Flusskrebse in Österreich” by Manfred Pöckle, Josef Pennerstorfer & Reinhard Pekny is a leaflet covering both native and introduced crayfish in Austria. It is very nicely produced and has details of the biology and aids to identification for four European and three American species. Copies can be obtained by contacting Manfred Pöckle at: Email: [manfred.poeckl@noel.gv.at](mailto:manfred.poeckl@noel.gv.at)

#### RISK OF DISEASE FROM CRAYFISH

Further to the article in issue 25(1), p. 5 of Crayfish NEWS, **Ferado Alonso Gutiérrez** reports that some 20 people were hospitalised due to an outbreak of ulceroglandular tularaemia in Central Spain. All the people infected had been handling red swamp crayfish from a

*(Continued on page 6)*

#### Crayfish NEWS cannot survive without your contributions

Dear IAA member

You might be surprised as to how interesting news of what you are doing would be to other members. So why not write a short piece on your crayfish activities for the newsletter? Colour and/or black and white photographs can be included. Also, please send in summaries of PhD, Masters theses, student projects, details of any articles you have had published, and notice of and subsequent reports on any conferences and meetings, and anything else you can think of, e.g. jokes, recipes etc.

Please send your (virus-free!) contributions to: David Holdich at [david.holdich@ntlworld.com](mailto:david.holdich@ntlworld.com)

Thank you

**Glen Whisson & David Holdich** (editors)



polluted stream. The pathogen was isolated from the gut of the crayfish as well as in the water. Very recently another isolated case, diagnosed by seroagglutination, was reported from the province of Palencia (NW Spain) (Ordax, 2003).

Anda, P. *et al.* (2001). Waterborne outbreak of tularaemia associated with crayfish during fishing. *Emerging Infectious Diseases*, 7(3), 575-582.

Ordax, J. (2003). El cangrejo rojo americano puede transmitir la tularaemia a los humanos. *Quercus*, 205, 28-30.

### **PARTHENOGENETIC CRAYFISH!**

Gerhard Scholtz and colleagues (see Literature of Interest to Astacologists) report in *Nature* that a crayfish found in the aquarium trade in Germany reproduces parthenogenetically. The Marmorkrebs or marbled crayfish as it is known has yet to be identified or its country of origin located. Molecular analysis indicates that it belongs to the Cambaridae. As well as proving to be an interesting laboratory model the authors point out the potential ecological threat should it become established in the wild – one specimen would be enough! As an American species, it may also be a potential transmitter of the crayfish plague fungus.

### **THE RED SWAMP CRAYFISH IN CHINA AND KOREA**

by **Tadashi KAWAI**

Introduction of non-indigenous crayfish across countries or regions for commercial reasons has been practiced for many years. The red swamp crayfish, *Procambarus clarkii* (Girard, 1852), is the most famous trading species. This species, native to Atlantic drainage of North America, is now established in worldwide, occurring in Europe, Pacific drainage of North America, Africa, and Asia.

The present status as well as historical information on the red swamp crayfish in Asia is not well known. This report briefly reviews the red swamp crayfish in Korea and China.

In August 1939, Koba (1941) found *P. clarkii* to be sold at a department store in Changchun, Northeastern region of China. In August 2000, the author had a chance to eat boiled *P. clarkii* at a traditional Chinese restaurant in Beijing, it was cooked as a delicious dish. The origin of the red swamp crayfish in China is not known.

The red swamp crayfish has never been distributed in Korea, but natural habitat of *P. clarkii* has been newly found from Seoul, South Korea, but the origin of the new locality in Seoul is not known.

In October 2002, the author found live *P. clarkii* at a pet shop in Nandemon Market, Seoul. Korean people use the species as live bait for fishing or a food for large fish in home aquarium. The *P. clarkii* was imported from Japan.

Reference: Koba, K., 1941. Transactions of the Biological Society of Manchoukuo, 4(1), 41-42. (in Japanese)

### **SPREAD OF PROCAMBARUS CLARKII IN SANTA MONICA MOUNTAIN STREAMS**

**Jay Huner** sent the following abstract he received from Masters student Jake Kerby, about to defend his thesis at the Department of Environmental Science and Policy, UC Davis, CA. E-mail: jlkerby@ucdavis.edu

**TITLE:** Stream obstructions and flow velocity as limiting factors in the spread of an alien crayfish (*Procambarus clarkii*) in Santa Monica mountain streams

### **ABSTRACT:**

Invasive species are a major threat to stream ecosystems; however, research has seldom identified successful ways of preventing their spread. Thirty-two stream sections were surveyed for two consecutive years in the Santa Monica Mountains of southern California to determine the distribution of the invasive crayfish, *Procambarus clarkii*. Surveys indicated that streams with large obstructions (waterfalls, culverts, artificial structures) often did not have crayfish present upstream of the obstructions. A mark-recapture study indicated that *P. clarkii* moved downstream significantly more than upstream. Obstructions significantly lessened movement of crayfish between pools. The distribution of crayfish in streams and mark-recapture data thus suggest that crayfish mainly spread downstream from a point of colonization and are restricted in their movement to adjacent upstream sections by the presence of both natural and artificial obstructions.

### **FREE COPIES OF FRESHWATER CRAYFISH 9 (Reading 1992)**

**David Holdich** has 5 copies of Freshwater Crayfish 9 that are slightly damaged. He is willing to send these to anybody who wants one - free of charge. If you are interested contact him on: [david.holdich@ntlworld.com](mailto:david.holdich@ntlworld.com)

### **NEWS FROM RUSSIA**

**Valery Fedotov** of St Petersburg (Fedotov@VF4493.spb.edu) reports that work is continuing at the St Petersburg Scientific Research Center for Ecological Safety, Russian Academy of Sciences on the use of native crayfish as biomonitors using non-invasive telemetric recording of cardiac parameters with means of an optical laser.

Valery has traveled to the Komi Republic in the north east of Russia to visit the Russian Academy of Sciences Ural Division: Komi Scientific Centre. In Syktyvkar the Second International Conference "Invertebrate animal diversity in the North" was held. Dr Ulia Vasilievna Leshko from the Institute of Biology talked about crayfish (probably *Pontastacus leptodactylus borioorientalis*), which inhabits the river Severnaia Dvina basin. It is only a small population and is recovering after an epizootic. The climate is very cold in this region. The following paper was presented: "Bioindication of the quality of the water as a habitat based on a non-invasive permanent monitoring of the carapaceof invertebrates cardiac activity." Authors: S.V. Kholodkevitch, V.P. Fedotov, A.G. Strochilo, E.L. Kornienko, A.S. Kurakin, Y.A. Kucherjavykh & D.V. Safronova.

The proceedings of the Regional Meeting of the International Association of Astacologists held in Astrakhan, August 2-6, 1999, have been published.

### **CRAYNET**

**European crayfish as keystone species-linking science, management and economics with sustainable environmental quality.**

*Programme environment and sustainable development key action global change and biodiversity.*

**Area:** Assessing and Conserving Biodiversity

**Start date:** 01/12/2002

**End:** 30/11/2005

Monitoring European native crayfish populations as indicators of biodiversity is an important tool in environmental management.

