Videos of the 2018 & back to 2001 Fish Show at Southend are at vimeo.com/southendaquarist

Open Show and Auction

Sun 11 AM City of Bradford

City of Bradford, England, United Kingdom

Sun 11:30 AM Bradford Academy

City of Bradford, England, United Kingdom

www.facebook.com/pg/BradfordDistrictAquaristsSociety/events/

https://bradfordaquarists.wordpress.com/

Birmingham Charity Fish Auction

· Hosted by TA Aquaculture

ISunday, December 2, 2018 at 10:30 AM

211 WORLDS END LANE, QUINTON, B32 2RX Birmingham, United Kingdom

Details

Charity fish auction to raise money for the poppy appeal. Everyone welcome to attend and br2

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.Hypoplectrus liberte, a New Species of Hamlet from Haiti

00Hypoplectrus liberte is a new species of hamlet which was discovered living in a Caribbean Island not usually in the spotlight for its marine life, Haiti. Found in them large but isolated Bay of Fort Liberté, the liberty hamlet represents one of the most regionally isolated marine fish species in the Caribbean.

The newly described Hypoplectrus liberte is distinguished based on a unique pattern of dark half bars and spots on the dorsal region of its light colored body. It's overall coloration is mostly tan with faint blue stripes and small spots on the face like many other hamlet species.

The liberty hamlet is most closely related to other well-patterned species of hamlets such as H. floridae and H. ecosur. H.

liberte grows to an average size of three to four inches long, right in line with other hamlet species and is not particularly hard to find since it prefers shallow inshore habitats such as seagrass beds, muddy bottoms and marginal reef environments. [JOSF]

found on ReefBuilders

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.Over a quarter of fish found in the Thames Estuary have ingested plastics, new research reveals

New research into the extent of plastic pollution in the UK, carried out by a team including scientists from The Natural History Museum, has found that 28% of fish living in the Thames Estuary have ingested microplastics.
The study also revealed that 39% of fish in the Firth of Clyde estuary in Scotland were similarly affected. Whilst much attention has been focused on oceanic plastic pollution, this new study explores the impact microplastic waste, which consists of small pieces of plastic no larger than 5mm in size, is having on fish populations of the Clyde and Thames estuaries
The research of London NERC DTP PhD student Alexandra McGoran, along with others including Dr Paul Clark from the

Natural History Museum, examined bottom dwelling and mid-water fish species at both sites.

The results of this study concluded that, out of the 876 fish and shrimp examined from both estuaries, around a third had ingested microplastics, and the average number of plastic pieces that had been consumed was equal across the Thames and Clyde.

Alex said: “People have started to really take note of the severity of plastic pollution and our research further demonstrates why this is such pressing issue. Both rivers are extremely diverse ecosystems, home to hundreds of different species. To see this large number of species that our plastic waste is putting in danger is actually rather shocking.

Our results show the need for more research into freshwater and estuarine ecosystems to be carried out so we can better understand the effects microplastics are having on their inhabitants.”

Dr Paul Clark said: “Assuming current trends continue then the total amount of plastic produced by 2050 will be 33bn tonnes. Therefore the amount of plastic litter polluting our beautiful blue planet will dramatically escalate over the coming years. Plastic pollution is on the same calamitous magnitude as climate change and deforestation. We are in need of a monumental behavioural change in human attitudes.

What I find most depressing about plastic pollution of our aquatic environment is that it is now irreversible and its presence will persist for many generations.”

This research was carried out in collaboration with Royal Holloway, University of London and University of the West of Scotland.

The project, Ingestion of plastic by fish: a comparison of Thames Estuary and Firth of Clyde populations, was partly supported by the University of London Sheina Marshall Memorial Fund and is published in the Marine Pollution Bulletin.

NAGWG – North American Goodeid Working Group

Latest Update on the GWG Convention in Guadalajara!Preliminary AGENDA – as of 14 August 2018

Workshop: Conservation of Goodeids and Co-Occurring Fishes in Central Mexico

7-11 November 2018, Guadalajara, Jalisco, Mexico

Sponsors: American Livebearers Association; Goodeid Working Group; Museo de Ciencias Ambientales, Universidad de Guadalajara; Universidad de San Nicolás de Hidalgo, Morelia

Wednesday, 7 Nov.: Participants arrive in Guadalajara and check-in to Country Plaza Hotel, located in the Zapopan area of the city (https://www.countryplaza.com.mx/english). Taxis from the airport to the hotel are on your own, but guidance will be provided. All hotel reservations must be made through the Workshop via John Lyons (jdlyons@wisc.edu) to receive the special reduced room rate.

Thursday, 8 Nov.: Conservation presentations at the Biblioteca Pública (Public Library) Juan José Arreola, Universidad de Guadalajara, Zapopan (http://www.bpej.udg.mx/).

0745-0845: Participants travel by carpool or cab from hotel to the biblioteca, as arranged by the Worskhop.

0845-0900: Welcome – Michael Koeck, Haus de Meeres Aqua Terra Zoo, Vienna, Austria, and John Lyons, University of Wisconsin-Madison, USA, Goodeid Working Group Co-Chairs

0900-0945: KEYNOTE PRESENTATION: Diversification of the Goodeids – Kyle Piller, Southeastern Louisiana University, Hammond, USA

0945-1025: The Museo de Ciencias Ambientales (MCA: Environmental Science Museum): Developing a new type of natural history museum for the conservation of the freshwater fishes of western Mexico – Eduardo Santana C., Universidad de Guadalajara, Jalisco, Mexico (The MCA site is under construction and visible from the biblioteca; scale models of the finished structure can also be seen in the biblioteca.)

1025-1055: Thermal tolerances of the Goodeids – Arcadio Valdés G., Universidad Autónoma de Nuevo León, Monterrey, Mexico

1055-1135: Conservation of Xenoophorus captivus (Goodeidae) – Juan Miguel Artigas A., San Luis Potosí, Mexico

1135-1205: BREAK

1205-1245: A personal history of Goodeid captive maintenance in the United States – Pat Hartman, Vicksburg, Michigan, USA

1245-1315: Trophic ecology of native Goodeids and introduced livebearers at the Teuchitlán Springs – Arely Ramírez G., Universidad Michoacana de San Nicolás Hidalgo, Morelia, Mexico

1315-1345: Citizen participation in the conservation of the fishes of Zacapu Lake, Michoacán – Martina Medina N., Universidad Michoacana de San Nicolás Hidalgo, Morelia, Mexico

1345-1600: LUNCH

1600-1630: Development of a “red list” of rare Goodeids for the International Union for the Conservation of Nature (IUCN) and the relation with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – Michael Koeck, Haus de Meeres Aqua Terra Zoo, Vienna, Austria
1630-1700: The 2016 GWG Goodeid survey of the state of Jalisco – Guenther Schleussner, Germany
1700-1730: The 2016-2017 survey of the livebearers of the state of Morelos – Norman Mercado S., Universidad Autónoma del Estado de Morelos, Cuernavaca, Mexico
1730-180: Conservation status of the native fishes that co-occur with Goodeids in central Mexico – John Lyons, University of Wisconsin-Madison, USA
1800-1900: ADJOURN. Return to the hotel by carpool or cabs, as arranged by the Workshop.
DINNER: on your own, although we will organize a group outing to a restaurant near the hotel.

Friday, 9 November: Visit to Teuchitlán Springs via chartered bus.
0830-1000: Leave the hotel and journey to the Teuchitlán Springs by bus as arranged by Workshop. Provided as part of registration.
1000-1030: Presentation on the re-introduction of the extinct-in-the-wild Goodeid Zoogoneticus tequila into the Teuchitlán Springs by Omar Domínguez D. and other Universidad Michoacana de San Nicolás Hidalgo, Morelia, faculty and students. Held at the Guachimontones Auditorium, located just outside of the town of Teuchitlán and about 2 km from the springs.
1030-1230: Tour of the spectacular pre-Columbian (500-1000 AD) ruins of Guachimontones (https://en.wikipedia.org/wiki/Guachimontones; http://www.guachimontonesoficial.com/blank).
1230-1530: Travel to the Teuchitlán Springs and outlet river at the Balneario El Rincón (bathing and recreational facility at the springs with drinks and snacks for purchase on your own). Time to explore the springs, relax on the grounds, snorkel among the fish (water clear and warm), or collect fish specimens (by nets [provided by Workshop] or microfishing [bring your own gear]) for closer examination.
Fishes reported from the Teuchitlán Springs and River:
Cyprinidae: Ameca Chub Algansea amecae (extirpated; none seen since 1960s)
Cyprindae: Ameca Shiner Notropis amecae (extirpated; re-introduced in 2016)
Cyprinidae: Amatlan Chub Yuriria amatlana (extirpated; none seen since 1960s)
Catostomidae: Mascota Jumprock Moxostoma mascotae (extirpated; none seen since 1970s)
Goodeidae: Butterfly Goodeid Ameca splendens
Goodeidae: Blackfin Goodeid Goodea atripinnis
Goodeidae: Golden Skiffia Skiffia francesae (extinct in the wild; none seen since 1970s)
Goodeidae: Black Splitfin Xenotoca melanosoma (extirpated; none seen since 1970s)
Goodeidae: Tarascan Splitfin Zoogoneticus purepechus
Goodeidae: Tequila Splitfin Zoogoneticus tequila (extinct in the wild; re-introduced in 2016)
Poeciliidae: Guppy Poecilia reticulata (non-native; rare)
Poeciliidae: Mexican Molly Poecilia sphenops (non-native)
Poeciliidae: Lerma Livebearer Poeciliopsis infans (rare)
Poeciliidae: Spottail Killifish Pseudoxiphophorus (Heterandria) bimaclatus (non-native)
Poeciliidae: Green Swordtail Xiphophorus helleri (non-native)
Poeciliidae: Northern Platyfish Xiphophorus maculatus (non-native; rare)
Cichlidae: Blue Tilapia Oreochromis aureus (non-native)

1530-1830: Dinner at the Montecarlo Restaurant (seafood and beef) along Presa (Reservoir) La Vega in Teuchitlán (https://www.tripadvisor.com/Restaurant_Review-g1602186-d4788774-Reviews-Restaurante_Montecarlo-Teuchitlan.html). Order and pay on your own. Living trees and a spring full of Blue Tilapia (Oreochromis aureus) and Butterfly Goodeids (Ameca splendens) are built into this beautiful restaurant. Fishing in the spring is encouraged!
1830-2000: Return by bus to the hotel in Guadalajara.

Saturday, 10 November: Visit to La Luz (aka Presa Verduzco) in Jacona, Michoacán, and then Lake Chapala in the town of Chapala, Jalisco, via chartered bus.
0830-1100: Leave hotel and journey to La Luz by bus as arranged by Workshop. Provided as part of registration.
1100-1115: Brief presentation on the fish fauna of La Luz – John Lyons, University of Wisconsin-Madison USA. Photos: (https://www.google.com/search?q=jacona+la+luz+mexico&rlz=1C1CHBF_enUS730US730&tbm=isch&tbo=u&source=univ&sa=X&ved=2ahUKEwja9Ij7rfDcAhWq24MKHab9DTEQsAR6BAgFEAE&biw=1271&bih=584)
1115-1330: Free time to explore the La Luz area, including relaxing along the water, snorkeling (water clear but a bit cool), netting, and microfishing, and to enjoy a snack or light lunch at the food stalls near the beach area. Order and pay on your own.
Fishes likely to be encountered:
Catostomidae: Mexican Redhorse Moxostoma austrinum
Goodeidae: Bulldog Goodeid Alloophorus robustus
Goodeidae: Barred Splitfin: Chapalichthys encaustus
Goodeidae: Blackfin Goodeid Goodea atripinnis
Goodeidae: Splotched Skiffia Skiffia multipunctata
Goodeidae: Tarascan Splitfin Zoogoneticus purepechus
Poeciliidae: Lerma Livebearer Poeciliopsis infans
Poeciliidae: Green Swordtail Xiphophorus helleri (non-native)
Poeciliidae: Spottail Killifish Pseudoxiphophorus (Heterandria) bimaclatus (non-native)

1330-1530: Journey by bus from La Luz to the town of Chapala on the shores of Lake Chapala.
1530-1545: Brief presentation on the fish fauna of Lake Chapala – John Lyons, University of Wisconsin-Madison, USA. (https://en.wikipedia.org/wiki/Lake_Chapala).
1545-1730: Netting of fish along the beach at Chapala (too turbid for snorkeling and challenging for microfishing) and exploration of the waterfront and town.
Fishes likely to be encountered in beach area:
Atherinopsidae: Mesa Silverside Chirostoma (Menidia) jordani
Goodeidae: Barred Splitfin: Chapalichthys encaustus
Poeciliidae: Lerma Livebearer Poeciliopsis infans
Poeciliidae: Yucatan Gambusia Gambusia yucatana (non-native)
Poeciliidae: Mexican Molly Poecilia sphenops (non-native)
Cichlidae: Blue Tilapia Oreochromis aureus (non-native)

1730-1900: Dinner in Chapala at restaurant to be determined. Order and pay on your own.

1900-2000: Return by bus to the hotel in Guadalajara. Optional group festivities in the Tlaquepaque District, famous for fine quality crafts and souvenirs, food and drink, and entertainment (https://www.featherandthewind.com/blog/tlaquepaque-jalisco-guide).

Sunday, 11 November: Workshop completed. Participants depart for home.

•Rhinogobius maculagenys • A New Species of Freshwater Goby (Teleostei: Gobiidae) from Hunan, China

Rhinogobius maculagenys
Wu, Deng, Wang & Liu, 2018

DOI: 10.11646/zootaxa.4476.1.11

Abstract
A new freshwater goby, Rhinogobius maculagenys sp. nov., was collected from Hunan Province in Southern China. This species can be distinguished from all congeners by a combination of the following features: first dorsal fin with 6 spines; second dorsal fin with a single spine and 7–9 segmented rays; anal fin with a single spine and 6–8 segmented rays; pectoral fin with 16 segmented rays; 32–34 longitudinal scales; 9–13 transverse scales; 11+16=27 vertebrae; pore ω1 missing; head and body yellowish brown; cheek and opercle yellowish brown with over 30 small orange spots, branchiostegal membrane yellow with over 10 small orange spots in males and white and spotless in females; first dorsal fin trapezoidal in males and nearly semicircular in females, with large bright blue blotch in front of second spine; spines 4 and 5 longest, rear tip extending to base of second branched ray of second dorsal fin in males when adpressed, but just reaching or not reaching anterior margin of second dorsal fin in females; caudal fin with 5–6 vertical rows of brown spots; flank with several longitudinal rows of

blackish-brown spots; and belly pale white.

Key words: Xiangjiang, fish taxonomy, valid species, color pattern

Rhinogobius maculagenys sp. nov.

Diagnosis. Rhinogobius maculagenys is distinguished from all congeners by a combination of the following features: second dorsal-fin rays I/7–9; anal-fin rays I/6–8; pectoral-fin rays 16; longitudinal scale series 32–34; transverse scale series 9–13; predorsal scale series 0; vertebral count 11+16=27; pore ω1 missing; head and body yellowish brown; cheek and opercle yellowish brown with over 30 small orange spots, branchiostegal membrane yellow with over 10 small orange spots in males and white and spotless in females; first dorsal fin trapezoidal in males and nearly semicircular in females, with large bright blue blotch in front of second spine; spines 4 and 5 longest, rear tip extending to base of second branched ray of second dorsal fin in males when adpressed, but just reaching or not reaching anterior margin of second dorsal fin in females; caudal fin with 5–6 vertical rows of brown spots; flank with several longitudinal rows of blackish-brown spots; belly pale white.
....

Distribution and habitat. The species is only known from Zhong Water, in the upper reaches of the Xiangjiang River on Lanshan County, Hunan Province. This species may be endemic within this basin.

Etymology. The specific name, maculagenys, from the Latin macula meaning spot and genys meaning cheek, in reference to the diagnostic feature of round orange spots on cheek. To be treated as a noun in apposition.

Qianqian Wu, Xuejian Deng, Yanjie Wang and Yong Liu. 2018. Rhinogobius maculagenys, A New Species of Freshwater Goby (Teleostei: Gobiidae) from Hunan, China. Zootaxa. 4476(1); 118–129. DOI: 10.11646/zootaxa.4476.1.11

•Jack Wattley passed away last night (3rd October) with his family.

Our condolences to the entire Wattley family and all his friends and followers around the world.
. But about the tremendous dedication and devotion to the Discus fish which he had.
He shall be missed and now he is free to explore without the physical limitations which his 95 year old body gave him. He missed his 96th birthday by 7 days.
Safe travels Jack

Jack Wattley was originally from Cleveland, Ohio. As a small child, he began keeping tropical fish. His first fish weren't anything unique, just what was common in the hobby at that time.
Similar to many of us, Jack's first exposure to discus came from pictures in fish books. He purchased his first discus from the N.Y. Aquarium Stock Company. These discus were wild common browns from Brazil. Unfortunately, they did not last very long. Moving to Miami, he decided to pursue work owning three clothing stores and just keep discus as a hobby.
In 1963, he traveled to the Amazon. Jack had heard from Harald Schultz, an anthropologist from Sao Paulo, Brazil, that green discus were in Lake Jurity. The blue discus, Symphysodon aequifasciata haraldi, is named for Harold Schultz. While in Manaus, Brazil, Jack met several pilots for a petroleum company. The men were trying to learn English. The pilots were willing to fly Jack over Lake Jurity while they were out surveying for their petroleum company in exchange for help in learning English. The lake turned out to be muddy, and Jack couldn't find discus in it.
Jack ended up meeting a French pilot who flew people over the Amazon in a six-seat plane. The pilot told Jack that he knew where the discus were and would fly him for free the next time he didn't have a full group. The plane could land on both land and water. He took Jack to Tefe and Fonte Boa. Since Jack was able to go out on his own in this area, he could go up and down the streams around Tefe looking for discus. This is where he found the green discus. Two years later, Jack planned his next trip to the Amazon. Once again he set out on his own. This time he went to Lake Manacupura where he collected blue discus.
Jack Wattley created the turquoise discus by crossing the blue and the green discus. At first he bred only for color, but later on he bred to increase size and vigor. There was a trade magazine published In the Tampa area that was used to promote fish from the Florida Tropical Fish Farm Association. Jack's turquoise discus became well known in the magazine. As word spread, so did the demand for his discus.

Click here to edit.

•*Tosanoides annepatrice* • A New Basslet (Perciformes, Serranidae) from Deep Coral Reefs in Micronesia

Tosanoides annepatrice

Pyle, Greene, Copus & Randall, 2018

DOI: *10.3897/zookeys.786.28421*

Abstract

The new species *Tosanoides annepatrice* sp. n. is described from four specimens collected at depths of 115–148 m near Palau and Pohnpei in Micronesia. It differs from the other three species of this genus in life color and in certain morphological characters, such as body depth, snout length, anterior three dorsal-fin spine lengths, caudal-fin length, and other characters. There are also genetic differences from the other four species of *Tosanoides* (d ≈ 0.04–0.12 in mtDNA cytochrome oxidase I). This species is presently known only from Palau and Pohnpei within Micronesia, but it likely occurs elsewhere throughout the tropical western Pacific.

Keywords: closed-circuit rebreather, coral-reef twilight zone, mesophotic coral ecosystems, Micronesia

Figure Holotype of ***Tosanoides annepatrice*** (BPBM 40848), 80.9 mm TL, collected at a depth of 115 m off Ngaruangl Atoll, Kayangel State, Republic of Palau. Photograph by RL Pyle.

***Tosanoides annepatrice* sp. n.**

Diagnosis: A species of *Tosanoides* (*sensu* Katayama and Masuda 1980) distinguished by the following combination of characters: fourth or fifth dorsal spine the longest; dorsal-fin soft rays 16–17; anal-fin soft rays 8; pored lateral-line scales 33–34; head 2.3–2.9 in SL; body depth 2.6 in SL; color in life of males: head and body rose-pink, crossed by four bright yellow stripes, the third continuing as a bright red stripe with magenta edges along the middle of the body, becoming yellow centered on base of

caudal fin; dorsal fin with a very broad middle yellow stripe with magenta margin; base of anal fin colored like body anteriorly, grading broadly to magenta posteriorly; pelvic fins yellow, except for magenta last two rays; eye magenta with an uneven ring of yellow around pupil; color of immature and presumed female yellow with irregular, near-vertical, wavy red lines following scale margins; anal fin magenta anteriorly, grading posteriorly to purple, with a greenish yellow streak; pelvic fins bright magenta.

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Distribution: *Tosanoides annepatrice* is known on the basis of four specimens, one (the holotype) collected at a depth of 115 m in Palau, and three paratypes collected at a depth of 148 m near Pohnpei. Additional individuals have been observed at depths of ~120–150 m at Pohnpei. The species likely occurs at similar depths throughout much of Micronesia, and perhaps more broadly within the tropical western Pacific; but more exploration of habitat at appropriate depths throughout this region is necessary to determine its complete geographic range.

Habitat and Ecology: *Tosanoides annepatrice* has been observed and collected along steep limestone coral-reef drop-offs at depths from 115–150 m. The paratypes were collected along a small rocky crevice near the entrance to a cave, but other individuals have been seen in similar habitats not in association with caves. Most individuals of this species have been observed in groups consisting of one apparent male and several apparent females and juveniles.

Etymology: We name this species ***annepatrice*** (a noun in apposition) in honor of **Anne Patrice** Greene, mother of Brian D. Greene who collected all known specimens of this new species, in recognition of the support and encouragement she has consistently provided to Brian's exploration of the deep coral reefs of Micronesia.

Richard L. Pyle, Brian D. Greene, Joshua M. Copus and John E. Randall. 2018. *Tosanoides annepatrice*, A New Basslet from Deep Coral Reefs in Micronesia (Perciformes, Percoidei, Serranidae). ***ZooKeys.*** 786: 139-153. DOI: *10.3897/zookeys.786.28421*

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•Result from the Festival of Fishkeeping held on the 29th & 30th of September 2018 National show league winner Roy Chapman (Southend, Leigh & District Aquarist Society)

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39eme Congrès AFC October

5th 2018

•Oct 5 at 12 PM – Oct 7 at 7 PM

•Le Havre, France

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4th Annual Charity Auction November 12th 2018 · Hosted by Kirkcaldy Aquarist Society

•Monday, November 12, 2018 at 7:30 PM – 10:30 PM

•The Gunners Kirkcaldy

KY1 3HQ Kirkcaldy, Fife

•Flexor incus • A New Genus and Species of Clingfish (Teleostei, Gobiesocidae) from the Rangitāhua Kermadec Islands of New Zealand

Flexor incus
Conway, Stewart & Summers, 2018

DOI: 10.3897/zookeys.786.28539

Abstract
Flexor incus, new genus and species, is described from 15 specimens (14.0–27.2 mm SL) collected from shallow (0–9 meters) intertidal and sub-tidal waters of the Rangitāhua Kermadec Islands, New Zealand. The new taxon is distinguished from all other members of the Gobiesocidae by a combination of characters, including a heterodont dentition comprising both conical and distinct incisiviform teeth that are laterally compressed with a strongly recurved cusp, an oval-shaped opening between premaxillae, a double adhesive disc with a well-developed articulation between basipterygia and ventral postcleithra, and many reductions in the cephalic lateral line canal system. The new taxon is tentatively placed within the subfamily Diplocrepinae but shares a number of characteristics of the oral jaws and the adhesive disc skeleton with certain members of the Aspasminae and Diademichthyinae.

Keywords: Acanthomorpha, Aspasminae, Diademichthyinae, Diplocrepinae, taxonomy

Figure 1. Flexor incus, NMNZ P.060717, holotype, 20.8 mm SL;
New Zealand, Kermadec Islands, Raoul Island.

Figure 2. Flexor incus, Te konui Point, Raoul Island, Kermadec Islands, 28 meters depth, photographed by R. Robinson (www.depth.co.nz) during the 2011 Kermadec Islands Biodiscovery Expedition, a project led by the Auckland Museum. Specimen not retained.

Systematics
Flexor gen. n.

Diagnosis: A genus of the Gobiesocidae differing from all other genera by a combination of characters, including: head and anteriormost part of body similar in width; a relatively elongate body with a small, double adhesive disc located beneath anteriormost part of body; an oval-shaped gap between premaxillae formed by a semicircular indentation along medial edge of premaxilla; premaxilla with a single row of teeth, comprising 2–3 peg-like, conical teeth anteriorly at, and adjacent to,

symphysis and 10–12 strongly laterally compressed, incisiviform teeth with strongly recurved cusp, along outer margin of bone; lower jaw with a single row of 14–16 small, conical teeth with sharply pointed and slightly recurved tip; posterior tip of basipterygium expanded and articulating with anteromedial edge of ventral postcleithrum via a shallow concave facet; mandibular portion of preoperculo-mandibular lateral line canal absent; lachrymal canal with two pores; upper and lower lip simple, uniform in thickness along jaw margin.

Etymology: New Latin, anatomical term for muscles, from the Latin flexus, past participle of flectere, to bend. In reference to the great flexibility of clingfishes, many of which have the ability to bend the body so that the tail end comes to lie close to the head. Masculine.

Type species: Flexor incus, new species

Aspasmogaster sp.: Stewart 2015: 1539, 1544;
Trnski et al. 2015: 473, 476, Table 1.

Etymology. Incus is the Latin word for anvil, in reference to the anvil-like outline of Raoul Island, the largest island in the Kermadec archipelago and type locality of the new species. A noun in apposition.

Figure . Distribution of Flexor incus. Type locality in red.

Distribution and habitat. Known to date only from intertidal and subtidal waters of the Kermadec Islands (Figure 11), including Raoul Island (type locality) and L'Esperance Rock. The majority of available specimens were collected from rock pools and from shallower subtidal areas (down to 9 meters) over rock and coral rubble substrates using ichthyocides (Stewart 2015). However, a single specimen of the new species has been observed (and photographed) at 28 meters in depth (Figure 2).

Kevin W. Conway, Andrew L. Stewart and Adam P. Summers. 2018. A New Genus and Species of Clingfish from the Rangitāhua Kermadec Islands of New Zealand (Teleostei, Gobiesocidae). ZooKeys. 786: 75-104.
DOI: 10.3897/zookeys.786.28539

•

Flashy fish species Tosanoides Aphrodite discovered in remote Brazilian archipelago

A new species of fish — a trippy yellow and pink creature that looks like it belongs at a Grateful Dead show — was discovered near the remote Brazilian island chain Saint Paul Archipelago, scientists said Tuesday.

The psychedelic swimmer, named Tosanoides Aphrodite after the Greek goddess of beauty, was found at a depth of 400 feet by researchers from the California Academy of Sciences, according to Phys.org.

Divers were so entranced by its neon tie-dyed look that they didn't notice the 10-foot shark hovering above them, video footage shows.

As for the reef fish, which is about the size of a car key, it went unnoticed for centuries because it swims in deep waters.

"Red light doesn't penetrate to these dark depths, rendering the fishes invisible unless illuminated by a light like the one we carry while diving," said post-doctoral fellow Hudson Pinheiro, who is studying the fish.

The males of the species have highlighter-hued pink and yellow stripes, while females are a solid, blood-orange color.

Scientists measured the creature's spine and tested its DNA to determine that it hadn't yet been discovered.

"This is one of the most beautiful fishes I've ever seen," said Luiz Rocha, the co-leader of the Hope for Reefs initiative. "It was so enchanting it made us ignore everything around it."

A description of the new fish was first published Monday in the biology journal ZooKeys.

•EU Fisheries failures jeopardise sustainability of small fishing communities, researchers argue

Source:
University of Kent

Summary:
Traditional artisanal fishing has been harmed by EU fishing policies that favor big businesses and ignores other more sustainable approaches to conserving fish stocks, according to new research.

FULL STORY

Traditional fishing boats in a Marsaxlokk fishing village.
Photo`Credit: Alicia SaidTraditional artisanal fishing has been harmed by EU fishing policies that favour big businesses and ignores other more sustainable approaches to conserving fish stocks, according to new research from the University of Kent.

This is the main finding of research by Dr Alicia Said, Professor Douglas MacMillan, and Dr Joseph Tzanopoulos of the School of Anthropology and Conservation (SAC) published in the world-leading open-access journal Frontiers in Marine Sciences.

To uncover the impact these actions have on local fishing fleets the researchers conducted in-depth interviews with fishing communities, fishers, and policy people, combined with detailed economic and policy analysis. The report found that traditional fishermen were being driven from the sea by specific policies that favour larger boats and richer owners. Furthermore, inadequate safeguards around informal recreational fishing meant that the pressures on vulnerable fish stocks such as scorpionfish, red seabream, mullets, and other prestigious fisheries has actually intensified.

The study examined the highly controversial and complex subject of 'blue-grabbing' -- the legitimate use of appropriating marine resources from traditional users, through policies and governance systems that favour large-scale fisheries, and other activities such as marine conservation for ecotourism.

Professor MacMillan says that EU policy focuses too much on fish stock conservation and has no meaningful policy regulations to ensure that quotas for over-fished stock such as tuna are equitably shared amongst fishermen. He said: 'This allows individual nations to implement their own policies, which more often than not are captured by local elites to enhance their wealth and power through, for example, capturing all the quota. Furthermore, additional conservation measures such as no fishing zones are crude and tend to curtail all fishing activity over large segments of coastal waters, regardless of whether the fishing undertaken there is sustainable or not.'

Dr Said, who is from a traditional Maltese fishing community, said: 'In Malta, the small traditional fishermen have essentially been pushed out of the water and their livelihood by government and EU policies that were actually intended to conserve fish stocks. At the end of the day the small guy ends up with nothing but a meagre retirement package, fishing communities fall into a spiral of decay, and profits for the large boat owners soar as they can capture all the quota and use cheap, often illegal labour to catch the fish.'

Working closely with the local fishing community, the research, has been discussed among key government officers, reaching as high as the Prime Minister of Malta and a major reallocation of quotas for tuna and other commercially important species to the traditional fishing fleet has been promised.

In the forthcoming days, the research will be presented to the Ministers of the Mediterranean who will meet in Malta for a High-level Ministerial Conference on 25th and 26th September to discuss the issues of small-scale fisheries sustainability, and one hopes that this article will bring positive change in the governance of fisheries in the Mediterranean region.

The contested commons: The failure of EU fisheries policy and governance in the Mediterranean and the crisis enveloping the small-scale fisheries of Malta by Alicia Said, Douglas MacMillan, Joseph Tzanopoulos, is published in Frontiers in Marine Science, section Marine Fisheries, Aquaculture and Living Resources.

Story Source:
Materials provided by University of Kent. Original written by Sandy Fleming. Note: Content may be edited for style and length.

Journal Reference:

•Alicia Said, Joseph Tzanopoulos, Douglas MacMillan. The Contested Commons: The Failure of EU Fisheries Policy and Governance in the Mediterranean and the Crisis Enveloping the Small-Scale Fisheries of Malta. Frontiers in Marine Science, 2018; 5 DOI: 10.3389/fmars.2018.00300

•Light pollution makes fish s more courageous

Source:

Forschungsverbund Berlin

Summary:

Artificial light at night also makes guppies more courageous during the day, according to a new behavioral study.

Share:

FULL STORY

Light pollution makes guppys more courageous during the day.

Photo`Credit: David Bierbach, IGBArtificial light at night also makes guppies more courageous during the day, according to a behavioural study led by researchers from the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB) and the Max Planck Institute for Human Development. Exposing fish to artificial light at night, not only made fish more active during the night, but also made them emerge quicker from hiding places during the day, which could increase their exposure to predators. Nocturnal lighting, however, did not affect their swimming speed or social behaviour during the day.

Light pollution can have many influences on ecological processes. Previous research has shown that artificial light at night can have several direct consequences on night-time activity and movement patterns of animals. Many animal species, for example birds and insects, are attracted by artificial light sources at night and can, as a result, loose their orientation. But how artificial light at night impacts the behaviour of individuals during the day, when the source of light pollution is absent, is largely unknown.

In this study, a team led by Ralf Kurvers of the MPI for Human Development in collaboration with the IGB, tested how

exposure to artificial light at night affected the behaviour of fish during the day. As study species, they used guppies, a tropical freshwater fish and one of the model organisms of animal behavioural science. The scientists studied three groups of animals. Each group was exposed to the same bright light conditions during the day, but to different illuminations during the night. The first group experienced complete darkness at night; the second group was kept at a low light level at night, comparable to nocturnal illuminance under a street lamp; and the third group experienced bright light at night. After ten weeks of exposure, the scientists conducted behavioural tests to study the consequences of nightly light exposure on daytime behaviours.

The results: Fish left their hiding places faster during the day and swam more often in the riskier, open areas of the aquarium when exposed to strong, but also weak, artificial light at night. The light exposed fish thus increased their willingness to take risks. "The consequences of this increased risk taking behaviour are difficult to predict, but it is possible that they could be more at risk of predation by birds or other fish" says IGB researcher David Bierbach, co-author of the study. The light exposed fish did not differ in swimming speed and sociality, as compared to the control fish. "We suspect that the nocturnal light causes a stress response in the fish, and fish generally increase their risk taking when experiencing stress," explains Ralf Kurvers, lead author of the study. Also in humans, a disruption of the night can cause a stress response. For example, firefighters who slept fewer hours during the night had elevated levels of the stress hormone cortisol.

Story Source:

Materials provided by Forschungsverbund Berlin. Note: Content may be edited for style and length.

Journal Reference:

•R. H. J. M. Kurvers, J. Drägestein, F. Hölker, A. Jechow, J. Krause, D. Bierbach. Artificial Light at Night Affects Emergence from a Refuge and Space Use in Guppies. Scientific Reports, 2018; 8 (1) DOI: 10.1038/s41598-018-32466-3

•Speolabeo hokhanhi • A New Cavefish (Teleostei: Cyprinidae) from Central

Vietnam

Speolabeo hokhanhi
Tao, Cao, Deng & Zhang, 2018

Hokhanh's Blind-cavefish DOI: 10.11646/zootaxa.4476.1.10

Abstract
Speolabeo hokhanhi, new species, is here described from Hang Va Cave in Phong Nha-Ke Bang National Park (Son River basin) in Central Vietnam. It can be distinguished from S. musaei by having no papillae on the lower lip, no hump immediately behind the head, a duckbilled snout, a shorter caudal peduncle (length 16.8–18.6% SL), and the pelvic fin inserted closer to the snout tip than to the caudal-fin base.

Keywords: Pisces, Speolabeo, new species, cavefish, Central Vietnam

FIGURE Speolabeo hokhanhi sp. nov., fresh individual immediately after capture. Lateral view.

Speolabeo hokhanhi sp. nov.

Diagnosis. Speolabeo hokhanhi can be easily distinguished from S. musaei by having a lower lip without papillae (vs. with a band of papillae along its anterior margin), no hump immediately behind the head (vs. present), a duckbilled (vs. pyramidal) snout, the pelvic fin inserted closer to the snout tip than to the caudal-fin base (vs. midway between the snout tip and caudal-fin base) and a shorter (vs. longer) caudal peduncle (length 16.8–18.6% SL vs. 19.6–22.7). All data here used for S. musaei are from Kottelat and Steiner (2011).
....

Etymology. The specific epithet is named in honor of Mr. Ho Khanh who discovered many caves in Phong Nha–Ke Bang National Park. He was a local guide of the cavefish survey conducted by the first author during 2014 into the cave where the type specimens were collected and provided detailed information about the collection site.
As common names, we suggest Hokhanh's Blind-cavefish (English)
and cá mù hang va hồ-khanh (Vietnamese).

FIGURE Distribution of Speolabeo hokhanhi (▲).

Distribution and habitat. Speolabeo hokhanhi is known only from the type locality (Fig. 4). Hang Va Cave is roughly 35 km south of Phong Nha village, rather close to Hang Son Doong, the world's largest known cave that is 5 km long, 200 m high and 150 m wide. A 24 km southward drive along the West Ho–Chi–Minh highway starting from the tourism center of the Phong Nha–Ke Bang National Park leads to the point closest to the cave site of the Hang Son Doong. From there, roughly

1.5 hours' northward walk following a narrow stony track through thick forest arrives at Hang Va Cave. Its entrance is about 30 meters above the ground. A descent of 15 m from the entrance reaches a cave passage containing a subterraneous stream. Downstream for approximately 200 meters, there is a shallow water pool with many stalagmites, usually 2–3 m tall (Fig. 5), where the type specimens of the new species were collected during the dry season. At this time, the pool had a muddy substrate and was 0.5–1.5 m in depth, 10 m wide, and 25 m long. More than 30 individuals of about the same size were observed in the pool; only six were captured using a hand-net. The fishes were swimming slowly and haphazardly, rather close to the water surface; when disturbed, they swam deeper, but did not seek shelter. A new shrimp species was found to sympatrically occur with the cavefish (Do & Nguyen 2014).

Nguyen Dinh Tao, Liang Cao, Shuqing Deng and E Zhang. 2018. Speolabeo hokhanhi, A New Cavefish from Central Vietnam (Teleostei: Cyprinidae). Zootaxa. 4476(1); 109–117. DOI: 10.11646/zootaxa.4476.1.10
Researchgate.net/publication/327632977_Speolabeo_hokhanhi_a_new_cavefish_from_Central_Vietnam

•The British Livebearer Association
in association with Fancy Guppy UK Autumn convention
Saturday 29th and Sunday 30th September
IBM Warwick, on the A46 at CV34 5AH

Saturday:
Fancy guppy show – Many stunning examples of the breeder's art on view.

Trade Stands

Exhibition of wild-type livebearers

We are delighted to welcome Fred Poeser who will present two talks. The first talk will focus on Guppy genetics whilst the second talk will concentrate on Central American species of Poecilia.

Fred is a lifelong livebearer enthusiast who has been on many expeditions exploring the wild habitats of livebearers. He is also the man who scientifically described the Endler guppy, Poecilia wingii (as well as other Poecilia sp)

Sunday:
Auction of wild-type livebearers on Sunday. Bring your surplus stock to sell or buy those hard-to-find species that you are unlikely to ever see in an aquarium shop.
Auction of guppies. All the guppies in the show are auctioned after prizes have been decided. Some show winners go for high prices but plenty of great-looking guppies sell for just £3 a pair – great value!
The British Livebearer Association
in association with Fancy Guppy UK Autumn convention

•Monopterus rongsaw • A New Species of Hypogean Swamp Eel (Synbranchiformes: Synbranchidae)from the Khasi Hills in Northeast India

Monopterus rongsaw
Britz, Sykes, Gower & Kamei, 2018

pfeil-verlag.de nhm.ac.uk

A new species of hypogean swamp eel, Monopterus rongsaw, is described from the Khasi Hills in Meghalaya, India. It was discovered while digging rock-strewn and moist soil close to a small stream during attempts to find caecilians. The new species differs from other synbranchids by the combination of absence of skin pigmentation, the eyes being tiny and covered by skin, and a count of 92 precaudal and 69 caudal vertebrae.

Ralf Britz, Dan Sykes, David J. Gower and Rachunliu G. Kamei. 2018. Monopterus rongsaw, A New Species of Hypogean Swamp Eel from the Khasi Hills in Northeast India (Teleostei: Synbranchiformes: Synbranchidae). Ichthyological Exploration of Freshwaters. IEF-1086:1-12
DOI: 10.23788/IEF-1086 pfeil-verlag.de/publikationen/monopterus-rongsaw-a-new-species-of-hypogean-swamp-eel-from-the-khasi-hills-in-northeast-india-teleostei-synbranchiformes-synbranchidae/

New species of blind eel that burrows through the soil discovered
nhm.ac.uk/discover/news/2018/september/new-species-of-blind-eel-that-burrows-through-the-soil-discovere.html

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.A colourful new tetra, Hyphessobrycon piorskii, which could one day capture our hearts.

An introduction to the new species was recently released in an open-access description published in ZooKeys and is available online for free. To read the full article by authors Erick Cristofore Guimarães, Pâmella Silva De Brito, Leonardo Manir Feitosa, Luís Fernando Carvalho-Costa, Felipe Polivanov Ottoni, click on A new species of Hyphessobrycon Durbin from northeastern Brazil: evidence from morphological data and DNA barcoding (Characiformes, Characidae).
Why It's a New Species
This new species represents another chapter in our understanding of a group which taxonomists and ichthyologists refer to as Hyphessobrycon sensu stricto (perhaps suggesting that this currently large genus of 150 or so species may one day be broken up). H. piorskii was discovered in the Munim and Preguiças river basins, two coastal river basins of the Maranhão State, northeastern Brazil, and is currently only known from these locations.
The description of this new species is well supported by current genetic methodologies. The data suggests there is possibly a close relationship to a sister group of tetra species, specifically H. bentosi (Ornate Tetra), H. socolofi (Lesser Bleeding Heart

Tetra), H. megalopterus (Black Phantom Tetra), H. erythrostigma (Bleeding Heart Tetra), and H. pyrrhonotus (Flameback Bleeding Heart Tetra), however the authors caution that this proposed relationship is, at this time, speculative at best. According to the paper, H. piorskii exhibits some telltale characteristics that may aid in identification. “The new species Hyphessobrycon piorskii sp. n., promptly differs from most congeners except by species of Hyphessobrycon sensu stricto by the presence of a dark brown or black blotch on dorsal fin (vs. absence), no midlateral stripe on the body (vs. presence) and Weberian apparatus upward horizontal through dorsal margin of operculum (vs. downward).” Furthermore, with the exception of exception to H. bentosi and H. hasemani, H. piorskii can be distinguished from Hyphessobrycon sensu stricto “by possessing an inconspicuous vertically elongated humeral spot,” compared to other configurations. If you’re still stuck in making an identification, the authors conclude that “The new species differs from H. bentosi by the absence of extended and pointed dorsal and anal-fin tips (Figures 1, 2) [vs. extended and pointed dorsal and anal-fin tips]; and from H. hasemani by the dorsal-fin black spot shape, which is located approximately at the middle of the fin’s depth, not reaching its tip [vs. extended along all the fin, reaching its tip in adults] and by presenting tri to unicuspid teeth in the inner row of premaxillary and dentary [vs. pentacuspid teeth].”

Hyphessobrycon piorskii In The Wild

Collecting sites of Hyphessobrycon piorskii sp. n. A. stream at the Anapurus municipality B. stream at Mata de Itamacaoca C. stream at Mata de Itamacaoca D. stream at Mata Fome, Barreirinhas municipality (photographed by Felipe Ottoni). CC BY 4.0

Perhaps of most interest to aquarists, should they ever find themselves lucky enough to care for this species, are the author’s ecological notes:

“Hyphessobrycon piorskii sp.n. lives in shallow well-oxygenated streams with transparent waters flowing over different types of substrates. The streams where H. piorskii sp. n. specimens were collected varied from 0.90 to 10 meters wide, with a maximum depth of 1.60 meters. They possessed moderate water currents (0.1–0.7 m/s), with clear, sandy substrates with pebbles, mud, leaf litter, and submerged logs, often also presenting aquatic macrophytes. Hyphessobrycon piorskii sp. n. was found near shore among aquatic vegetation, tree roots and fallen logs. Other species found at both sites were Anablepsoides vieirai Nielsen, 2016, Apistogramma piauiensis Kullander, 1980, Astyanax sp., Cichlasoma cf. zarskei, Copella arnoldi(Regan, 1912), Crenicichla brasiliensis (Bloch, 1792), Hoplias malabaricus (Bloch, 1794), Megalechis thoracata (Valenciennes, 1840), Nannostomus beckfordi Günther, 1872, andSynbranchus marmoratus Bloch, 1795. Gut contents of C&S specimens contained algae and disarticulated arthropod remains.”

Reference:

Guimarães EC, De Brito PS, Feitosa LM, Carvalho-Costa LF, Ottoni FP (2018) A new species of Hyphessobrycon Durbin from northeastern Brazil: evidence from morphological data and DNAbarcoding (Characiformes, Characidae). ZooKeys 765: 79-101. https://doi.org/10.3897/zookeys.765.23157

from Reef to Rainforest Media

•Mexico arrests 'hitman' for trafficking endangered fish

View of dried swim bladders of totoaba fish, which despite an international ban on trade could still be found for sale in Guangzhou, capital of China's southern Guangdoing province, in March 2018Mexico has arrested an alleged drug cartel hitman on charges of trafficking the critically endangered totoaba fish, a species whose swim bladder can fetch up to $20,000 on the black market in China.

The suspect, identified as Oscar N, alias "El Parra," was arrested Thursday on charges of leading a top totoaba trafficking gang, said the government of the northern state of Baja California.

The gang is believed to have ties to the powerful Sinaloa drug cartel, the state authorities said in a statement.

El Parra is a "dangerous hitman and drug trafficker" who was also wanted on a homicide charge, it said.

The state sits on the Gulf of California, the native habitat for the totoaba.

Known as the "cocaine of the sea" for its lucrative price, the species has been in steep decline since the 1940s, largely because of its reputed healing powers in Chinese medicine.

In China, the totoaba's swim bladder is believed to have beautifying properties and cure a host of ailments, from arthritis pain to discomfort during pregnancy.

In fact, they are so prized that some Chinese simply display them in fancy cases in their homes.

The illegal fishing trade has turned increasingly violent in recent years, and has also claimed a collateral victim: the nearly extinct vaquita marina, the world's smallest porpoise, which can end up caught in the nets used to fish for totoaba.

Researchers estimate there are less than 30 vaquitas left today.

To save the species, Mexico has banned fishing in a giant 1,800-square kilometer (700-square mile) area.

The move was backed by the likes of Hollywood heartthrob and conservationist Leonardo DiCaprio and Carlos Slim, the Mexican telecoms billionaire who is one of the world's richest people.

The government also tried to catch vaquitas with the aid of US Navy-trained dolphins and breed them in a protected reserve.

But the program was aborted last year after a vaquita died in captivity.

Read more at: https://phys.org/news/2018-09-mexico-hitman-trafficking-endangered-fish.html#jCp

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2018 AUTUMN AUCTION Sunday 16th September (Fish, Plants, Equipment)

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Highbank Community Centre

Farnborough Road, Clifton, NG11 8 Nottingham, United Kingdom

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•Schistura alboguttata • A New Loach Species (Cypriniformes: Nemacheilidae) from the Pearl River basin in Guangxi, South China

Schistura alboguttata

Cao & Zhang, 2018

DOI: 10.11646/zootaxa.4471.1.5

Abstract

Schistura alboguttata, a new species of nemacheilid loach, is herein described from the Leli-He, a tributary flowing to the You-Jiang of the Pearl River basin (Zhu-Jiang in Chinese) at Tianlin County, Guangxi, South China. This new species can be

readily distinguished from all other Chinese species of Schistura by its striking body coloration consisting of irregular white spots scattered over the dorsal and lateral regions of the body, with occasional irregular bars with narrow interspaces on the predorsal region.

Keywords: Pisces, nemacheilid, new species, Zhu-Jiang

FIGURE 5. Distribution of Schistura alboguttata. Symbol indicates type locality.

FIGURE 4. Live specimen of Schistura alboguttata, IHB2008050101, 71.4 mm SL, same collection data as holotype.
Schistura alboguttata, sp. nov.

Etymology. The specific epithet is derived from the Latin albus (white) and guttata (spotted), in reference to the irregular white spots scattered over the dorsal and lateral regions of the body.

Liang Cao and E. Zhang. 2018. Schistura alboguttata, A New Loach Species of the Family Nemacheilidae (Pisces: Cypriniformes) from the Pearl River basin in Guangxi, South China. Zootaxa. 4471(1); 125–136.
DOI: 10.11646/zootaxa.4471.1.5

Longfin Eels

.Three out of four New Zealand freshwater fish 'staring extinction in the face'

Decline rates among the New Zealand longfin eel were highest in areas dominated by pasture. Photo / File

By: Jamie Morton
Science Reporter, NZ Herald
jamie.morton@nzherald.co.nz@JamienzheraldNew Zealand's freshwater fish species are in peril - and especially in our pastoral countryside, researchers say.

In a study published today, Victoria University's Dr Mike Joy and colleagues compared land use changes and more than 20,000 freshwater fish records since 1970.

The data, which covered fish distribution and abundance trends, along with a key measure of water pollution called the Index of Biotic Integrity (IBI), showed more than three quarters of 25 analysed species were in decline.

About the same rate of decline was found in 20 native fish species - and in two thirds of cases, the drop was a significant one.

Further, the study found more species were in decline around land dominated by pasture compared with areas covered with natural vegetation - a trend also shown among the IBI data.

That declines were worse in pasture catchments than those characterised by scrub or forest wasn't surprising, Joy said, although the rate of decline was nonetheless "scary".

In pastoral areas particularly, some of the most striking falls were observed among longfin eel and common bully.

Across all land types, the biggest drops were also recorded among redfin and bluegill bully, lamprey, brown trout, shortjaw and giant kokopu, black flounder and torrentfish.

Joy pointed out that it wasn't until the early 1990s that New Zealand assessed the threat status of its native freshwater fish, finding that one in five were either threatened or at risk.

It was an "appalling figure", he said, but also now old news - the current proportion was 74 per cent.

Fish shop owner takes first plunge into novel writing

A FISH shop owner has taken his first plunge into the realm of novel writing.

Mark Edmondson, of Canterbury Close, Atherton, has released a murder whodunnit book called The Beast of Bodmin.

It is set at the scene of the Cornwall moor in Bodmin, which has been surrounded by the myth of a wild cat living there for decades.

Mark, 41, who owns Amazon Aquatics on Welch Hill Street, in Leigh, said: “I have always been interested in the world of fiction.

“I used to enjoy reading books by writers like Agatha Christie and the first adult book I read was Jaws.

“I actually went to Bodmin on holiday about 20 years ago and it was only later that I checked that there has not been a fiction book written about it.

“I started writing this book four years ago but I wasn’t sure about sending a draft of it off to anyone.

“When I was at a family party I told my niece Kadie about it and she shouted at me.

“The next night I sent it off to an agent and he got back to me within a day.

“I kept the release of my book a secret from a lot of my friends and family so it was a surprise to them when I told them about it.

“There has been a good response to the book so far which has been nice.”

Mark has worked in the aquarium industry since the age of 16 before owning his own business when he was 21 and then taking control of Amazon Aquatics 13 years ago.

His love of writing has always been in the forefront of his mind throughout his career though.

Mark, who has two grandchildren, added: “In my writing, I like concentrating on developing the characters first and then seeing where the story goes.

“I am now working on another couple of books.”

The Beast of Bodmin is available to purchase over the counter at Amazon Aquatics.

Customers can also order the book from Waterstones by clicking here.

It is set to be available online at Amazon in the coming weeks.

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•Eilat coral reef defies expectations and regenerates after fish farming damage

The resilience of Red Sea coral fascinates scientists, who try to understand why the marine life fares well in heat and seems immune to the bleaching which plagues other reefsBy TOI STAFF and AFPToday, 6:59 pm 0 While coral reefs around the world are getting sicker as a result of global warming, the reef in the southern Israeli port city of Eilat is thriving despite years of damage caused by intensive fish farming in the waters and global warming.

According to a Hadashot TV news report on Friday, the healthy coral marks a victory against the damage caused by humans to underwater marine life.

From 1995-2008, waste from multiple “cages” for fish farming caused massive damage to the Red Sea coral, but after environmental and diving groups petitioned the government and appropriate authorities, the cages were removed and the coral has now bounced back.

“The government thinks that we and the other ecological groups are against progress and development, but it’s not true — we just want it to be done with supervision for the sustainability of the environment,” Maya Yakbis of the Zalul environmental NGO told Hadashot.

The fish farming cages in the Red Sea. (Screenshot from Hadashot via Zalul)But fighting back after the pollution from the fish farming is not the only remarkable victory for the coral. Global warming has in recent years caused colorful coral reefs to bleach and die around the world — but not in the Gulf of Eilat, or Aqaba, part of the northern Red Sea.

At the forefront of research into why the Red Sea coral seems to be so resilient, is Maoz Fine of the Interuniversity Institute for Marine Sciences, whose laboratory of water tanks and robots simulate the effects of climate change on temperature and oxygen levels in the water.

Fine’s team also grows coral on tables some eight meters (26 feet) underwater in the Red Sea, in an area closed to public and dubbed “the nursery.”

Researchers from the Interuniversity Institute for Marine Sciences in the southern Israeli resort city of Eilat monitor coral growth while scuba diving on June 12, 2017 in the Red Sea off Eilat. (AFP PHOTO / MENAHEM KAHANA)According to Fine, the Gulf of Eilat corals fare well in heat thanks to their slow journey from the Indian Ocean through the Bab al-Mandab strait,

between Djibouti and Yemen, where water temperatures are much higher.
Oceans also absorb about one-third of the carbon dioxide released by human activities, resulting in increasing acidification that is harmful to corals.

Coral reefs, most famously Australia's Great Barrier Reef, are experiencing in recent years unabated mass bleaching and die-offs.
Losing coral reefs is not only bad news for tourists diving to see their beauty and marine life swimming among them.

Corals are important to "the whole balance of the ecosystem," offering structure, food, and protection to a variety of marine animals, Jessica Bellworthy, a PhD student under Fine's supervision taking part in the Eilat research said last year.
Their rich chemical interactions have provided components for medications, including those for cancer and HIV patients.
But while the coral reefs off Eilat and Aqaba may be able to survive global warming for now, they also face other risks.
Fertilizers, pesticides, and oil pollution "harm the corals and lower their resilience to high temperatures," Fine told the AFP last year.

From The Times of Israel

•Protein in zebrafish found to keep out sperm of other fish

by Bob Yirka, Phys.org report
A small team of researchers with the Vienna Biocenter has discovered that a protein that exists on the exterior of zebrafish eggs acts as a sentry—allowing only sperm from zebrafish to enter. In their paper published in the journal Science, the group describes discovering the protein and the way they tested its purpose. Ruth Lehmann with the NYU School of Medicine writes a Perspective piece on the work done by the team in the same journal issue.
For fish like the zebrafish, it is important to protect eggs from fertilization by other fish species—this is because they lay their eggs in the water. The eggs are subsequently fertilized by sperm that males eject into the water. The researchers in this new effort have found the mechanism involved—the fish produce a protein that serves as a gatekeeper, allowing only zebrafish sperm to enter.
The researchers discovered the protein as they were conducting a study of the zebrafish genome—they found a gene responsible for producing a previously unknown 80 amino acid protein. Because of its location in the genome, the researchers suspected it was involved in reproduction. The discovery led them to design and carry out experiments to determine its purpose.
The researchers used CRISPR to engineer test zebrafish that produce a homolog of a protein from another fish species—

medaka. This allowed medaka sperm to fertilize eggs from the test zebrafish, but blocked the zebrafish sperm. This established that the purpose of the protein was to serve a gatekeeper, which is why they named it Bouncer.

The results are important, Lehmann notes, because they bring scientists closer to understanding species-specific fertilization. She further notes that despite efforts by researchers over the years, the mechanism by which an egg and sperm produce a zygote is still not very well understood. Therefore, any new piece of information is important. The researchers plan to continue their study of Bouncer, with a specific goal of determining the bonding factors that come into play between egg and sperm.

Explore further: Infertility mechanism in males identified

More information: Sarah Herberg et al. The Ly6/uPAR protein Bouncer is necessary and sufficient for species-specific fertilization, Science (2018). DOI: 10.1126/science.aat7113

Abstract

Fertilization is fundamental for sexual reproduction, yet its molecular mechanisms are poorly understood. We found that an oocyte-expressed Ly6/uPAR protein, which we call Bouncer, is a crucial fertilization factor in zebrafish. Membrane-bound Bouncer mediates sperm-egg binding and is thus essential for sperm entry into the egg. Remarkably, Bouncer not only is required for sperm-egg interaction but is also sufficient to allow cross-species fertilization between zebrafish and medaka, two fish species that diverged more than 200 million years ago. Our study thus identifies Bouncer as a key determinant of species-specific fertilization in fish. Bouncer's closest homolog in tetrapods, SPACA4, is restricted to the male germline in internally fertilizing vertebrates, which suggests that our findings in fish have relevance to human biology.

Read more at: https://phys.org/news/2018-09-protein-zebrafish-sperm-fish.html#jCp

•Lanlabeo duanensis • A New Genus and Species of Labeonin Fish (Teleostei: Cyprinidae) from southern China

Lanlabeo duanensis

Yao, He & Peng, 2018

DOI: 10.11646/zootaxa.4471.3.7

Abstract

Lanlabeo, a new genus of fish belonging to the family Cyprinidae, is described from the Pearl River drainage basin in Guangxi Province, southern China. This new genus is distinguished from all other genera of the cyprinid tribe Labeonini by a combination of morphological and phylogenetic characters. It differs morphologically from all other Asian labeonins in its uniquely modified oromandibular morphology. For example, this genus has a frenum connecting the upper jaw and lower lip at the corner of the mouth, regularly arranged papillae densely scattered over the ventral margin of the rostral cap, a vestigial upper lip, a rostral cap overlying the upper jaw and with a fimbriate posterior margin, and a lower lip divided into two lateral fleshy lobes and one central plate. These two lateral fleshy lobes are small and translucent, and the median lobe of the lower lip is large and has papillae regularly arranged in many transverse rows. In the lower jaw, the dentary is transversely L-shaped in ventral view because its anterior part forms a right-angle turn and its transverse branch is anterioposteriorly expanded. In addition, analyses of four nuclear gene datasets indicate that this new genus forms a highly divergent lineage within the Labeonini, and that Lanlabeo is closely related to the genus Ptychidio. Therefore, based on morphometric differences and phylogenetic relationships, we describe this new genus herein as Lanlabeo, containing the new species Lanlabeo duanensis.

Keywords: Pisces, Taxonomy, Cypriniformes, Pearl River drainage basin, Guangxi Province

Min Yao, You He and Zuo-Gang Peng. 2018. Lanlabeo duanensis, A New Genus and Species of Labeonin Fish (Teleostei: Cyprinidae) from southern China. Zootaxa. 4471(3); 556–568. DOI: 10.11646/zootaxa.4471.3.7

Myersina balteata is the Newest Species of Shrimp Goby from the Solomon Islands

JAKE ADAMS

Myersina balteata is a new species of shrimp-associated tropical goby that was just described from specimens collected in the Solomon Islands. This new species has a very distinctive color pattern which is divided by a very pronounced black vertical line, leading to its common name of Belted Shrimp goby.

The Belted Shrimp goby belongs to a genus that we don't usually see as much in the aquarium hobby. Most shrimp gobies that we're familiar with are from the genus Cryptocentrus whose members are generally larger and more slender than Myersina gobies.

By contrast Myersina balteata is shorter and stockier, but what it lacks in overall size it makes up for with an elaborately adorned dorsal fin. The overall body coloration is a light gray overall, with a light cream colored belly, a single blue facial stripe, and of course that black midbody line. [JOSF]

Clown fish: Whence the white stripes?

Source:CNRS

Summary:
Scientists have been training their attention on the developmental and evolutionary determinants of white stripes in clown fish. They now detail why, when, and how these bands arose and help elucidate their role in clown fish social organization.Share:
FULL STORY

The full spectrum of clown fish colors is not limited to orange or red but ranges from yellow to black. Species differ in the number of white stripes they display: zero, one (head), two (head and trunk), or three (head, trunk, and tail). Four species of clown fish (genus Amphiprion), clockwise from top left: A. ephippium, A. frenatus, A. ocellaris, and A. bicinctus.
Credit: © John E. Randall

Coral reef fish are known for the wide range of colors and patterns they display, but the mechanisms governing the acquisition of these characteristics are still poorly understood. These researchers focused on clown fish, a group including

thirty-some species distinguished by numbers of white stripes (zero to three) and by their colors, including yellow, orange, red, and black.

The team first demonstrated that stripes are essential for individual fish to recognize others of their species. Such recognition is critical to the social organization of clown fish living among sea anemones where several species may be simultaneously present and young fish seek to establish permanent homes.

The researchers then deciphered the sequences of stripe appearance and disappearance during the life of a clown fish. Stripes appear one at a time, starting near the head and progressing towards the tail, during the transition from the larval to the juvenile stage. The team further observed that some stripes are occasionally lost between the juvenile and adult stages, this time beginning at the tail end.

In an attempt to understand the origin of these patterns, the scientists delved into the evolutionary history of clown fish. They discovered that their common ancestor sported three stripes. Just like today's clown fish, these ancestral stripes were made up of pigmented cells called iridophores containing reflective crystals. Over the course of evolutionary history, some species of clown fish gradually lost stripes, resulting in today's range of color patterns.

The research team would like to follow up by identifying the genes that control the acquisition of white stripes for a greater understanding of how they evolved. This should clue them in to the processes behind color diversification and the role color plays in the social organization of reef fish.

Story Source:

Materials provided by CNRS. Note: Content may be edited for style and length.

Journal Reference:

•Pauline Salis, Natacha Roux, Olivier Soulat, David Lecchini, Vincent Laudet, Bruno Frédérich. Ontogenetic and phylogenetic simplification during white stripe evolution in clownfishes. BMC Biology, 2018; 16 (1) DOI: 10.1186/s12915-018-0559-7

Cite This Page:

•MLA

•APA

•Chicago

The BCA Proudly Present A Family Friendly Event

Date: Sunday 21st October

Venue : The Oak Hotel, 8640 Stratford Road, Solihull, B94 5NW

Speakers

Dr Julia Day & George Famer

Lectures

George Farmer : The modern approach to planted aquariums followed by a workshop on how to create the perfect aquascape on your aquarium

Dr Julia Day : The soda lake cichlids of Tanzania/Kenya

Please support the BCA This event is for beginner to expert everyone welcome to this family friendly day with children's competition taking place throughout the day so if your into fish and are worried about bringing the family then don't we welcome you all.

Disabled access is available and there is a vast menu of food and drinks from the bar at this new venue which seems to be our best one yet in terms of layout and services provided.

Overnight room are available for over night stays if you are traveling from afar and want to get there the day before see pictures for prices.

Tickets are available online with fast track entry please follow this link below to purchase yours today http://www.british-cichlid.org.uk/wordpress/shop/

You can pay on the day but we are encouraging you to book your ticket in advance with the above link.

We will also be trailing a new format, no auction but Tropical fish and dry goods inc foods etc will be on sale from our usual sellers at unbelievable prices - see the fish and buy directly with the seller which can be done throughout the day while the talks are one so feel free to wounder about and talk to the other aquarists and sellers.

If you are a seller please contact Darren Evans

vicechairman@british-Cichlid.org.uk to book your table

Seller conditions

Table rental = £15.00

Up to 2 people may share a table and both must be registered when booking.

Only fish and related aquarium items may be offered

All transactions are between buyers & sellers only

The BCA will not be responsible for any sales disputes.

Buyers

Door entry – £5.00 for BCA members and £10.00 Non members (this will include 12 months membership to the BCA valued at £5 per person. You will receive a free goodie bag on entry with products from our supporters and also a tub of vitalis food - which will more than cover the entry fee

BCA Raffle with a large selection of prizes worth over £300.00

Doors Open at 9.00am for setting up and first lecture begins 10:00 am

Note to sellers

Once you have booked your table, you are free to advertise your items on the BCA web site forum, on the BCA face book group page, and any other pages where you have permission.

The BCA will not be responsible for advertising any sales items.

All fish being offered for sale must be adequately packages

Please feel free to share this post on other groups

Thank you

The BCA Committee

Alternatively you can join the British cichlid association on the day at the door for ONLY £5 For 1 YEAR.

Which entitles you to discounted entry to all Bca events for 1 year aswel as digital pdf copy's of ciclidae magazine which is only available at the British cichlid association

How The Day Plays Out ???

The days schedule will look something like this. but please be aware some parts may go on longer or shorter the times are just a guideline

9:00 to 10am - booking in of lots for sellers

10:00am first talk & second talk (if available)

12:00 Break for lunch - food available

13:00 third talk (if one is available)

16:00 to 16:30 end of day

http://www.british-cichlid.org.uk/wordpress/

http://www.british-cichlid.org.uk/phpBB3/index.php…

https://www.facebook.com/groups/BritishCichlidAssociation/?ref=group_header

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2018 AUTUMN AUCTION September 16th (Fish, Plants, Equipment)

•kSunday, September 16 at 10:30 AM – 6:30 PM

•Highbank Community Centre

NG11 8 Nottingham, United Kingdom

Click here to edit.

.Divers Find Enormous, Creepy Squid on New Zealand Beach

Divers visiting New Zealand's south coast of Wellington were looking for a nice spot to go spearfishing Saturday morning (Aug. 25) when they spotted one of the ocean's most impressive creatures of the deep: a dead, but fully intact, giant squid.

"After we went for a dive we went back to [the squid] and got a tape measure out, and it measured 4.2 meters [13 feet] long," one of the divers, Daniel Aplin, told the New Zealand Herald.

A representative from the New Zealand Department of Conservation told the Herald that the divers most likely found a giant squid (*Architeuthis dux*) and not a colossal squid (*Mesonychoteuthis hamiltoni*). [Photos of the Stunning Deep-Sea Squid Feeding]

Both species of squid are formidable sea creatures, with giant squid typically reaching 16 feet (5 m) long, according to the Smithsonian, and the colossal squid reaching over 30 feet (10 m) long, according

to the International Union for Conservation of Nature.

Scientists know very little about these deep-sea-dwelling species, because the animals are so rarely seen. Most observations come from the occasional specimen washing ashore, as in this case, or getting accidently captured by fishers.

The enormous tentacled creature's cause of death is unknown. Aplin told the Herald that the squid appeared unscathed except for a scratch that was so tiny that the diver "wouldn't think that's what killed it." When the divers checked the squid out again after their dive, they thought it had shrunk a little, but no animals had decided to make a meal out of the dead beast, Aplin said.

He called a friend from New Zealand's National Institute of Water and Atmospheric Research (NIWA) who arranged for the squid to be collected, the Herald reported.

Aplin is an employee of Ocean Hunter Spearfishing & Freediving Specialists, and posted his photos of the giant squid on the company's Facebook page, which elicited a wealth of commentary. "Imagine that swimming past!" wrote one commenter. "Who's up for calamari?" wrote another.

Original article on Live Science.

Glorious Freshwater Eels!

A writhing mass of uniquely-patterned eel-like fishes in a net seemed to jump out of the email inbox, demanding attention. But what are they? Image credit: Nautilus Tropical Fish Wholesale

Every once in a while the weekly flow of in-stock announcements from aquatic wholesalers highlights something that catches the attention of even well-seasoned aquarists. This week, Joe Hiduke of Nautilus Marine Wholesale, Inc., based in Plant City, FL, sent out a Friday reminder with some highly-patterned eels, the likes of which didn't register as something I was familiar with.

From Nautilus: “Great week for incoming with a ton of cool Indo fish. Got in more of the Tiger morays and they’re way bigger than the last batch. Awesome fish with a great pattern. The bigger size is probably worth the higher price, they get more impressive as they get bigger. These are Gymnothorax polyuranodon, a true freshwater species that is regularly documented way further up-river than tidal areas. I also got in white-cheek morays, which are definitely not a true freshwater species. We have them in a system that’s about 5ppm salt and they seem to do OK at that level (at least temporarily).”

Here’s another, better look at this beautiful eel species. The color and pattern rival most any of the marine moray species. The Tiger Freshwater Moray Eel is definitely something of interest for those who like oddball aquarium inhabitants. Something you don’t see every day; the Tiger or Spotted “Freshwater” Moray Eel, Gymnothorax polyuranodon. Image credit: Goh Yong Teng, CC BY 3.0

Gymnothorax polyuradon is widespread in the Indo-Pacific region, and yes, it can get large as Hiduke suggests, reaching up to 150 cm in length (nearly 5 feet). According to FishBase data, it is “usually found within 20-30 km [12.5 to 18.5 miles] of the sea at a maximum elevation of about 30-40 m [90-131 feet].”

Given that the species is closely related to all the other marine morays, and that this species is also found in brackish and fully-marine environments, it is probably safe to presume that this species may have a reproductive phase tied to the ocean in some manner. It could make for a fascinating and challenging breeding project for some intrepid aquarist to unlock.

To the LFS managers reading this, you can order them from Nautilus Tropical Fish Wholesale, while supplies last of course.

References:

Gymnothorax polyuradon on Fishbase

Reef to Rainforest.

•One Fish, Two Fish, Fish Can Count(ish?)New research shows—again—that fish “count” like humans do. Are our cognitive evolutionary roots fishier than we thought?

New research shows that fish can tell the differences between quantities. What does that mean for our special human brains? (istock/Gregory_DUBUS)

By **Sam Schipani**

SMITHSONIAN.COM

Most of us don't think about the importance of counting beyond our Sesame Street days. Little did we know, that purple puppet was teaching us an essential cognitive survival technique. In the wild, counting allows individuals to join larger social groups, determine the number of mates available, and choose more plentiful food. But counting has long been considered the purview of smarter species with higher levels of perceived consciousness, the Clever Hans horses and celebrity lab chimps of the animal kingdom. Increasingly, though, scientists have shown that fish—often considered near the bottom of the spined-species hierarchy—are able to discern between discrete quantities much like their more cognitively complex counterparts. Moreover, the evidence shows that the way piscine brains "count" is similar to way our own brains process numerical quantities, suggesting deeper evolutionary origins for one of our most essential cognitive skills.

Building on the findings of a 2015 study conducted with guppies, recently published research in Animal Behavior shows that freshwater angelfish presented with two small quantities of food reliably chose the larger stack of snacks. The preference for larger quantities supports the idea that fish are able to process quantitative information in order to be more successful foragers in the wild. This isn't "counting" in the "one, two, three" sense—fish likely have little use for The Count's prescribed methods—but it shows that fish do know the difference between these quantities.

The idea that fish can "count" isn't new—fish have been shown to be able to discriminate between different sized groups (or "shoals") of their own species, which is especially beneficial for smaller fish that rely on large groups for protection—but calorie count is more immediately important to a fish's individual survival than choosing a slightly larger group of friends.

"Whether a fish chooses the very large shoal or the somewhat smaller shoal makes [little] difference from a survival perspective," says Robert Gerlai, a biologist at the University of Toronto and one of the authors of the paper. "But whether it eats more or eats less is very important."

The new research demonstrated more than just fish's ability to count for their lives. As the food quantities grew larger than four items, the angelfish in the study were less picky with their choice. Other vertebrates behave the same way when presented with large quantities. Vertebrates—including humans—and even some exceptional invertebrates like bees are thought to have separate systems of counting for small and large quantities, in which small numbers are perceived as exact quantities and larger numbers are more roughly estimated. And humans, just like the angelfish in the study, seem to switch from the exact system to the approximate one around the magic number four.

The connection between fish and humans may come in handy as scientists continue to explore the intricacy of human cognition. "Fish are easier to study than complex humans," says Gerlai. "In the long run, ideally, we would like to know what the [human] brain can do, and you can study much better with fish."

But the findings beget more evolutionary existentialism. Humans and fish diverged evolutionary over 400 million years ago (humans and apes, by comparison, are thought to have parted evolutionary ways between 4 and 13 million years ago). "If

you find some numerical abilities in fish, then those abilities are more ancient than previously thought," says Christian Agrillo, a biologist at the University of Padova, who was not involved in the current research, but published one of the earliest studies on fish counting in 2008. If such skills can be traced back to our fishy ancestors, it may change how we understand our own cognitive magnificence.

The scientific jury is still out on whether fish actually have two systems of numerical cognition. Agrillo points out that while fish represent half of the world's vertebrates, most lab studies are conducted only on guppies, angelfish, and zebrafish. "To better understand the issue, we need to focus on a larger range of fish," he concedes. But the research has already come a long way since Agrillo began studying fish cognition in 2004. "Until some years ago, nobody thought that fish could have numerical estimation," he says. "When we started, we were the only one. It seemed like a very silly curiosity of science."

But for some scientists and activists, our cognitive connection to fish is especially important considering the way fish are treated in our global economic system. Humans use—and often abuse—fish, recklessly mass-harvesting wild stocks for food, raising them in intensive aquaculture conditions, ripping them from reefs to keep as pets, and even conducting unfettered testing on them for scientific research. Yet fish receive fewer legal protections than their charismatic vertebrate counterparts. Depending on local laws, fish are often exempted from animal welfare protections entirely.

"Humans tend to give more empathy to animals they think are smart," Culum Brown, a biologist at Macquarie University who studies the behavioral ecology of fish. "Because of that, people have had very little consideration for fishes because most people underestimate them." Brown argues that emerging research supporting fish intelligence should qualify them for more ethical treatment than is afforded by current policies. Rather than take fish off the menu entirely, Brown at least hopes to see more consumers advocating for humane treatment of tuna, salmon, and their finned brethren, much like the way the free-range movement has taken off for chickens. After all, sharing cognitive roots with other vertebrates not only helps fish count, but also gives them the capacity to feel pain.

"What is striking about vertebrates is how conserved they really are—just about every aspect of human cognition has been observed in other animals," Brown says. "The reason that humans suffer the way that they do is we inherited it from our fishy ancestors."

Counting aside, studies show that fish's cognitive abilities rival other vertebrates in many ways. Sharks' sense of smell is 10,000 times more sensitive than humans'. Thanks to an extra cone in their eyes, some fish see colors more vividly than we do. Fish can recognize family members, inherit social traditions in the form of migration patterns, and use primitive tools. Contrary to beliefs popularized by Finding Nemo, many fish have fantastic memories, avoiding hooks for as long as a year after being caught once and building mental maps of their surroundings that they retain for weeks after being moved.

Brown, for his part, has "mixed feelings" about Finding Nemo. On the one hand, the movie led to a massive overharvesting of the starring species, and the ditzy Dory character feeds into the debunked (but prevailing) mythology that fish have two-second memory spans. But he also sees the positive impact it has had on public perception. "People like and can warm to

fishy characters," he says, "If you can have empathy for Dory and Nemo and everyone else, that's got to be a positive thing."

The recent findings on fish cognition may not immediately change human hearts and minds with respect to their intelligence, but every new study can be counted as a step in the right direction.

Read more: https://www.smithsonianmag.com/science-nature/one-fish-two-fish-fish-can-count-ish-180970122/#aJTO6OTsztjrfaCf.99

•Barbus anatolicus • A New Barbel (Teleostei: Cyprinidae) from the Kızılırmak and Yeşilırmak River Drainages in northern Anatolia

Barbus anatolicus
Turan, Kaya, Geiger & Freyhof, 2018

DOI: 10.11646/zootaxa.4461.4.5

Abstract
Barbus anatolicus, new species, is described from the Kızılırmak and Yeşilırmak River drainages in the southern Black Sea basin. It is distinguished from other Barbus species in the Middle East by having 58–71 total lateral line scales, a moderately ossified last simple dorsal-fin ray, serrated along about 70–80% of its posterior margin, many small irregular shaped black or brown spots, smaller or as large as scales, often forming large, dark-brown blotches on the head, back and flank in adults and juveniles, and a concave posterior dorsal-fin margin. In addition, DNA barcode data reject the hypothesis that it belongs to one of the other species of the B. barbus species group. Barbus bergi from Bulgaria and adjacent Turkey is treated as synonym of B. tauricus. Barbus tauricus was previously believed to be restricted to the Crimean Peninsula but is found to be widespread in the Black Sea basin.

Keywords: Pisces, freshwater fish, Middle East, taxonomy, morphology, cytochrome oxidase I

Barbus anatolicus, new species

Etymology. The name of the species is derived from Anatolia. An adjective.

Davut Turan, Cüneyt Kaya, Matthias Geiger and Jörg Freyhof. 2018. Barbus anatolicus, A New Barbel from the Kızılırmak and Yeşilırmak River Drainages in northern Anatolia (Teleostei: Cyprinidae). Zootaxa. 4461(4); 539–557.
DOI: 10.11646/zootaxa.4461.4.5

.Shrimp heal injured fish

August 23, 2018
Source:
James Cook University
Summary:
Scientists have discovered that shrimp help heal injured fish.
Share:

FULL STORY
Cleaner shrimp.
Credit: Image courtesy of James Cook UniversityJames Cook University scientists in Australia have discovered that shrimp help heal injured fish.

PhD student David Vaughan is working on a project led by Dr Kate Hutson at JCU's Centre for Sustainable Tropical Fisheries and Aquaculture.

He said it was important to know how the shrimp interact with fish, as the team is in the process of identifying the best shrimp species to use to clean parasites from farmed and ornamental fish.

"Between 30 -- 50% of farmed fish in Southeast Asia, the largest fish producing region in the world, are lost to parasites.

"We know that shrimp clean parasites from fish and if we can identify a species that does it efficiently, and does no harm, it offers a 'greener' alternative to chemicals," he said.

Mr Vaughan said scientists knew injured fish visited shrimp 'cleaning stations' to have parasites removed -- but the question was whether shrimp then took advantage of the injured fish and fed on their wounds. He said the relationship between cleaner shrimp and their client fish was complicated, with the shrimp known to eat the mucus of the fish and the fish occasionally eating the shrimp.

The scientists used high-definition cameras to record the details of the interaction between the species. "We found that shrimp did not aggravate existing injuries or further injure the fish," said Mr Vaughan.

He said image analyses showed the cleaner shrimp actually reduced the redness of the injury. "Injuries in fishes are susceptible to invasion by secondary pathogens like viruses and bacteria, and the reduction in redness by shrimp indicates that cleaner shrimp could reduce infections."

Mr Vaughan said cleaner shrimp are also known to indirectly influence the health of client fishes by reducing stress levels as a function of cleaning -- which also increased the ability of the fish to heal.

Story Source:

Materials provided by James Cook University. Note: Content may be edited for style and length.

Journal Reference:

- David B. Vaughan, Alexandra S. Grutter, Hugh W. Ferguson, Rhondda Jones, Kate S. Hutson. Cleaner shrimp are true cleaners of injured fish. Marine Biology, 2018; 165 (7) DOI: 10.1007/s00227-018-3379-y

James Cook University. "Shrimp heal injured fish." ScienceDaily. ScienceDaily, 23 August 2018. <www.scienm/releases/2018/08/180823092057.htm>.

.Apocyclops Poised to Revolutionize Marine Fish Aquaculture

Photo--A very young Flame Angelfish, Centropyge loricula, with a belly full of Apocyclops panamensis copepod nauplii. Image credit: Avier J. Montalvo.

Attendees of the 2018 MBI Marine Breeder's Workshop in July first heard the news that first-feeding Flame Angelfish (Centropyge loricula) will consume the nauplii of Apocyclops panamensis (often humorously dubbed Apocalypse pods). The revelation came via Tamara Marshall, Director of Live Feeds at the Dallas World Aquarium, who showed the amazing photograph taken by the now highly-regarded breeding researcher Avier J. Montalvo. With further research, this revelation could prove to be a game-changer for hobbyist-scale marine fish breeding. (Dwarf marine angelfishes have long presented a challenge with tiny, nearly impossible to feed larvae.)

Parvo Is the Reigning Champion

To date, the nauplii of Parvocalanus crassirostris (Parvo) has taken the spotlight as the go-to tiny copepod fueling progress in the pursuit of pelagic spawning marine fish species with their tiny, rotifer-refusing larvae. Parvo is certainly here to stay for the foreseeable future, but it is relatively difficult to culture compared to more familiar feeds (rotifers, Artemia, and benthiccopepods), requiring live phytoplankton and accepting no substitutes.

Without highly intensive culture methodologies, a larval rearing run of a pelagic spawning fish like a Centropyge spp. angelfish may require as much as 450 gallons of Parvo copepod culture simply to provide the copepod nauplii needed to meet the food demands of a single 20-gallon vessel containing a few hundred eggs from a small angelfish species (as estimated by Matthew Carberry of Sustainable Aquatics during a Q&A session at the same Workshop). This calculation doesn't even take into account the amount of phytoplankton production required to maintain that volume of copepod cultures. Parvo, while effective, may simply not be economically viable, at least not at this time.

Meanwhile, the ability to culture Apocyclops panamensis on prepared algae pastes (including those used to rear rotifers) eliminates one of the more labor-intensive aspects of live food production and could save valuable space in a small-scale hatchery or fishroom (I once calculated that it took approximately eight hours per month just to produce a couple gallons of phytoplankton per week; what's your time worth?). The consistency of prepared algal products can also eliminate an important nutritional variable in the overall live feed equation.

Is Apocyclops the Panacea?

Avier J. Montalvo showing off dozens of captive bred Lemon Butterflyfish in 2016.

According to Montalvo, A. panamensis has some interesting challenges and benefits. While it can be grown on prepared algae pastes, "It's just really hard to scale up density on [algae] paste. However, it could eliminate rotifers if you just replace them in a feeding regime with larger nauplii."

A. panamensis also offers a bit of flexibility to the aquaculturist. “It does allow for somewhat of a cool/cold storage,” shared Montalvo. “We were able to harvest nauplii the day before and use it the next day, without it molting much, if at all.”

If A. panamensis proves to be a more forgiving organism in culture than Parvo, and particularly if higher nauplii production levels can be achieved, it will be an ideal first-food candidate for marine fish larviculture research.

Then, if experimentation proves A. panamensis as a viable first-food, particularly with species that before now had only been reared with Parvo, we could see A. panamensis eclipse Parvocalanus crassirostris as the go-to first feed for pelagic-spawning marine ornamental fish larvae.

Apocyclops May Be a Better Fit

The bottom line is this: many hobbyist marine fish breeders really don’t enjoy culturing phytoplankton, and they’re not very good at it (when compared to professionals who do that, and that alone). Phytoplankton culture is time-consuming with no economic savings to be had at a hobbyist scale (especially once you factor in the value of your time).

The ability to culture A. panamensis using prepared feeds makes it an easy-to-add food organism alongside rotifers, brine shrimp, and commercially-prepared larval rearing diets like Otohime and derivative products. Hobbyists won’t have to return to culturing live algae like they would if they selected to culture Parvocalanus crassirostris.

Seeing conclusive evidence that a difficult-to-rear marine fish larvae will accept A. panamensisnauplii as a first-feed is exciting news for small-scale breeders. Whether it will perform as a viable first and/or exclusive larval food remains to be seen, but research is already conclusive that even occasional feedings of copepod nauplii are highly beneficial to a wide range of marine fish larvae. Even in routinely bred marine fish species like clownfish or dottybacks, the use of this copepod in conjunction with or in replacement of rotifers could vastly improve the survivability and quality of marine fish being produced.

Further Reading

Visit the recent announcement from Reed Mariculture debuting their Apex-Pods for more information on Apocyclops panamensis.

Found on Reef to Rainforest

This completes the TEN years of PetFish Monthly under the Editorship of Anthony Evans.

All available issues can be downloaded for FREE at:- aqua-worlduk.weebly.com

Large fish making return to the North Sea

Cod and flounders are up in numbers (photo: DTU)

A new study by the Technical University of Denmark (DTU) has shown that there has been a significant increase in the numbers of large fish in the North Sea in recent years.
The research revealed that the biomass of 25 species of large fish in the North Sea has doubled since 2000. In some cases, as with the cod, flounder and hake, the increase has even tripled and quadrupled.

“The populations of large fish such as the cod have been struggling for a long time. But now we can finally see a tendency that indicates they are being restored,” said the lead author of the research, Rob van Gemert, who contends it could have a big impact in the food chain.
“We call it an opposite trophic cascade. When there are more predatory fish, their prey will be consumed in higher numbers and that will impact the prey’s breeding ability. Ultimately, it could impact the fishermen who live on catching smaller fish like sandeel and sprat.”
Based on data from 2016, the research has been published in the scientific journal, ICES Journal of Marine Science.

•

These endangered eel larvae are mysteriously declining. DNA in fish guts show where some of them end up.

Endangered eel larvae make a tasty treat for fish in an ocean desert

European eels, besides being delicious, have mystified biologists for more than a century. They spend their adult lives in estuaries and rivers, and head to the Sargasso Sea near Bermuda to reproduce. Their tiny transparent larvae then hitch a ride back to Europe on the Gulf Stream. But eel populations have been mysteriously dropping, prompting desperate measures to replenish their numbers.

Now, researchers have a clue about one peril young eels face during their journey: hungry fish. The larvae were once considered too difficult for most predators to spot and catch, but a new study that looks at DNA traces in the guts of fish near eel-breeding waters suggests at least six marine species can make quick work of baby eels.

“The study shows that although eel larvae are likely difficult for predators to see, they do contribute to ocean food webs as prey for other species,” says Michael Miller, an eel expert at Nihon University in Fujisawa, Japan, who was not involved with the work.

The European eel (Anguilla anguilla) was once quite common, but its numbers have declined precipitously in the past 4years. Moreover, the number of larvae that finally make it to Europe as “glass eels” has dropped by 90%, leaving some to wonder what might be happening to the larvae. Was something eating them up?

That didn’t seem likely. Eel larvae—which are about the size of a small willow leaf—had been detected only once, in the late 1800s, in the guts of other fish. It could also be that, once swallowed, they decayed so quickly that they disappeared without a trace. Intact, the eels are still difficult to find, “even in a tray of water,” says study co-author Mads Reinholdt Jensen, now a graduate student at Aarhus University in Denmark. As a result, researchers studying eel declines have looked at everything—everything, says Jensen, except who eats the eel larvae.

Instead of searching for the larvae themselves, Jensen and his colleagues at the University of Copenhagen looked for their DNA in 62 fish collected and quickly frozen in 2014 by a Danish team that had searched in vain for spawning adult eels in the Sargasso Sea. Jensen’s team had to develop special eel-specific molecular tags that would latch on to any eel DNA in a fish’s gut. Ultimately, the researchers verified European eel DNA in six of the fish, each of them a different species, they report in the August issue of Marine Biology.

That was a surprise to Tracey Sutton, a marine ecologist at Nova Southeastern University in Fort Lauderdale, Florida, who was not involved with the study. “It goes against the dogma that these fishes prey primarily on crustaceans,” he explains. “It shows a new [food web] pathway we didn’t have before.”

The discovery is a “novel preliminary finding” that could help reveal the “true diets” of these predatory fish, and their role within the oceanic food web, says Ryan Saunders, a marine ecologist with the British Antarctic Survey, in Cambridge, who was not involved in the study. The Sargasso Sea is notoriously low in nutrients, he notes, and not much is known about the few fish that live there.

The DNA techniques used in the new study could “revolutionize the way we study fish diets and food webs,” Saunders says. But Jensen notes they still won’t help the researchers estimate how many larvae the fish were eating or what proportion of the predators’ diet the eels represented. Calculating those numbers will be important to concluding anything about the role

the fish are playing in the eel's decline, Miller says. And Sutton is skeptical: "Predation on larvae is a normal thing," he says. "The dramatic decline is almost surely human-induced."

•Cryptocoryne joshanii(Araceae) • A New Species Serendipitously Discovered in Sulu archipelago, Philippines

Cryptocoryne joshanii Naive & Villanueva

in Naive & Villanueva, 2018.
DOI: 10.6165/tai.2018.63.248
Photos by: M.A.K. Naive.

ABSTRACT
A new species, Cryptocoryne joshanii Naive & Villanueva, from the island of Basilan, Philippines, is herein described and illustrated. It is comparable to C. usteriana, but differs significantly in having lanceolate leaves, acicular, outwardly recurved, purplish red stigmas and an erect spathe limb. Information on the geographical distribution, ecological data, phenology and conservation status as well as an identification key to the Philippine Crytocoryne species are provided.

KEY WORDS: Aroids, Basilan, Cryptocoryne, Mindanao, New species, Sulu archipelago, Philippines.

Fig. 1. Cryptocoryne joshanii Naive & Villanueva
A. Habit B. Spathe C. Leaf D. Cataphyll E. Kettle F. Tube, limb G. Spadix showing the male and female flowers.

Photos by: M.A.K. Naive.
Scale bar: C, D = 5 cm; E, F = 2 cm; G = 1 cm.

Cryptocoryne joshanii Naive & Villanueva, sp. nov.

Type: PHILIPPINES, Mindanao Region, Sulu Archipelago, Basilan Island, elev. 850 m, May 2013. R.J. Villanueva 001/2017 (holo HNUL, iso USTH) - Full locality data withheld owing to the risk of potential exploitation of wild populations for commercial purposes.

Diagnosis: Somewhat similar to C. usteriana in the spathe, but it differs significantly in having an acicular, outwardly recurved, purplish red stigmas and an erect smooth limb. The leaves are clearly different by being smooth, light green with markings.

Distribution: This Philippine endemic species has only been observed and documented in Sulu archipelago, particularly on the island of Basilan, Philippines. It is very local and despite of extensive survey along the stream and in other areas, it occurs only on the site where the sample was collected.

Ecology: The population of this species was found growing in a slow flowing montane forest stream in the interior of Basilan Island. The forest is relatively dense with only 40% sunlight reaching the stream bed. The population grows on volcanic rock in the stream several meters from the waterfall at elevations of about 800– 1000 m a.s.l. The roots and rhizomes were noted to penetrate deep into the pebble/sandy substrate rich with decaying leaves. The entire clump was submerged or partly submerged with leaves exposed.

Eponomy: Named after Joshan Vlad A. Villanueva, son of the discoverer/second author.

Notes: Based on overall morphology, Cryptocoryne usteriana, appears to be the closest ally of C. joshanii. However, C. joshanii differs significantly in having these following characters: lanceolate leaves, an erect apex of the limb and in having acicular, outwardly recurved, purplish red stigmas.

Mark Arcebal K. Naive and Reagan Joseph T. Villanueva. 2018. Cryptocoryne joshanii (Araceae), A New Species Serendipitously Discovered in Sulu archipelago, Philippines. Taiwania. 63(3); 248-250. DOI: 10.6165/tai.2018.63.248

Why zebrafish (almost) always have stripes

Mathematical model helps explain key role of one pigment cell

Source:

Ohio State University

Summary:

A mathematical model helps explain the key role that one pigment cells plays in making sure that each stripe on a zebrafish ends up exactly where it belongs.

Share:

FULL STORY

These images show how the researchers simulated two months of pattern development in zebrafish in their model.

Credit: Alexandria Volkening/Bjorn SandstedeOne of the most remarkable things about the iconic yellow and blue stripes of zebrafish is that they reliably appear at all.

Zebrafish begin life as transparent embryos, with three types of pigment cells on their skin. As they develop, the pigment cells somehow manage to organize themselves almost without fail into the stripes we all know.

Now researchers have developed a mathematical model that may explain the key role that one of those pigment cells plays in making sure each stripe ends up exactly where it belongs on the fish.

"It's amazing that you have these individual cells that can sort themselves into these reliable patterns," said Alexandria Volkening, lead author of the study and a postdoctoral fellow at Ohio State University's Mathematical Biosciences Institute. "The cells move around on the skin to create stripes. It's like individual birds that know how to flock together and fly in formation."

This new model suggests that one of the pigment cell types -- called iridophores -- leads the process of cell organization. These cells provide redundancies in the cell interaction process that ensures that if one interaction fails, another one can take over.

The result is that zebrafish get their stripes, even when some of the cellular processes go wrong, she said.

Volkening conducted the research with Bjorn Sandstede, professor of applied mathematics at Brown University. Their study was published today in the journal Nature Communications.

Until recently, almost all research on zebrafish stripes focused on the other two pigment cells: the black cells (called melanophores) and the yellow cells (called xanthophores). It wasn't until 2013 that biologists discovered that iridophores also played a role.

The role of iridophores is definitely vital: Some mutations of zebrafish that don't have iridophores develop spots instead of stripes.

"In our mathematical model, we use what we know about the interactions of the other two cell types to explain what drives iridophore behavior. We found that we could predict what iridophores would do in a way that matches up well with what biologists have observed in zebrafish," she said.

Researchers have known that iridophores change their shape in carefully orchestrated patterns on the skin of zebrafish, and the changes in shape instruct the other two types of cells on where to go in ways that result in stripes.

The model explains what drives these shape changes.

The model showed, not surprisingly, that the process is extremely complex, Volkening said. But the complexity is necessary to build redundancy into the process. The researchers found that they could reduce the complexity in the model in some

ways, and the zebrafish would still develop stripes.

"We think that is because iridophores are getting their signals from multiple places. If one interaction fails, there is another that can take its place," she said.

"Because of the redundancies, you can remove some interactions, and still get stripes. They're not perfect stripes, but they are similar."

However, there are cases when the process breaks down so much that stripes no longer form. That occurs in some mutations of zebrafish. Volkening said the model can account for these mutations, which adds to the likelihood that the model is correct.

"The biological discovery of the role of iridophores was a real paradigm shift in how we thought zebrafish stripes were created. This led to a lot of open questions, and our mathematical model provides an explanation for how iridophores behave on the fish skin," she said.

"We show that the complex interactions of these cells may be important for reliable stripe formation, but also key to why zebrafish have stripes but related fish have different patterns."

Story Source:

Materials provided by Ohio State University. Original written by Jeff Grabmeier. Note: Content may be edited for style and length.

Journal Reference:

•Alexandria Volkening, Björn Sandstede. Iridophores as a source of robustness in zebrafish stripes and variability in Danio patterns. Nature Communications, 2018; 9 (1) DOI: 10.1038/s41467-018-05629-z

•Family evacuated due to California`s Carr Fire returns home to find pet fish alive

REDDING (KRON) - A family who had to evacuate from their home due to the Carr Fire got quite the happy surprise upon their arrival.
According to Cal Fire, firefighters with Cal Fire Engine 1489 and officers with the Corning Police Department fed "Grant" the fish while the family was away.
"Thank you Cal Fire Engine 1489 and Corning Police Department for ensuring Grant the fish got a snack while his owner was evacuated due to the #CarrFire Remember to have a plan for all your pets," Cal Fire said on Facebook.

This isn't the only time first responders are helping local residents and their pets/wildlife.
According to Lance Richards, firefighters also helped feed his chicken "even after my house burned."
Thank you firefighters and police officers!

BKA West London Group Auction September 9th 2018

Sunday, September 9 at 9 AM - 4 PM
The Scout Hall, next to St Peter's Church, St Peter's Road, West Molesey, Surrey, KT8 2QE (Approx. 11/2 miles west of Hampton Court Station)

ALL WELCOME
Never kept killifish ? these are rarely seen in the shops.
Doesn't matter, very colourful and most easily kept
PLEASE JOIN US

3 Auctions
2 Killifish (Red and Blue) starting at 12 noon, followed by an auction of any other fish.
Booking in from 10:45 am.

Only 10% commission.
Raffle and free refreshments.
Entrance Fee: £2 on the door

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.Fishing banned at town's lake after fish catch herpes

By Matthew CritchellCanvey Lake, Denham Road, Canvey, Essex.UK

A LAKE has been closed to the public following an outbreak of a disease which killed 100 fish.

Canvey Town Council has banned fishing at Canvey Lake after the spread of Koi Herpesvirus (KHV).

CEFAS took fish for testing after the deaths.

Concerns were raised about oxygen levels, inexperienced fisherman and also the KHV disease.

A spokesman for the town council said: "Following the notice of confirmed designation placed on Canvey Lake on August 8 and issued by the Fish Health Inspector of the Centre for Environment Fisheries and Aquaculture Science (CEFAS) acting as the competent authority for the purposes of the Aquatic Animal Health (England and Wales) Regulations 2009, the Town Council can now confirm that examinations of samples taken by CEFAS from the dead common carp found evidence for the presence of koi herpesvirus (KHV) disease and that their diagnostic testing for these samples is now complete.

"The Town Council's Community Warden continues to attend the site daily, walking banks and observing the fish stock where possible.

"There are no implications for human and animal health.

"For more information please contact the fish inspector on 01305 206700 or fhi@cefas.co.uk."

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.Ancient hookups between different species may explain Lake Victoria’s stunning

diversity of fish

By Elizabeth PennisiAug. 9, 2018 , 12:35 PM

WAIMEA, HAWAII--In the shallow waters of Lake Victoria, the world's largest tropical lake, swim some 500 species of cichlid fish with a dizzying variety of appearances, habitats, and behaviors. Genomic studies have shown they arose from a few ancestral species in just 15,000 years, a pace that has left researchers baffled about how so much genetic variation could have evolved so quickly. Now, extensive sequencing of cichlids from around Lake Victoria suggests much of it was there at the start, in the cichlids' ancestors. Ancient and more recent dallying between cichlid species from multiple watersheds apparently led to genetically diverse hybrids that could quickly adapt to life in the lake's many niches.

Reported last week at the Origins of Adaptive Radiation meeting here, the work is "a tour de force, with many lines of evidence," says Marguerite Butler, a functional morphologist at the University of Hawaii in Honolulu. It joins other research suggesting that hybridization is a powerful force in evolution. "What hybridization is doing is allowing the good stuff to be packed together," Butler says.

Some of Lake Victoria's cichlids nibble plants; others feed on invertebrates; big ones feast on other fish; lake bottom lovers consume detritus. Species vary in length from a few centimeters to about 30 centimeters; come in an array of shapes, colors, and patterns; and dwell in different parts of the lake. Mutations don't usually happen fast enough to produce such variety so quickly. "It's been really hard to figure out what's going on," says Rosemary Gillespie, an evolutionary biologist at the University of California, Berkeley.

e Seehausen, an evolutionary biologist at the University of Bern who has studied cichlids for more than 25 years, wondered whether hybridization could have generated the genetic raw material. In earlier research, his team collected cichlids from the rivers and lakes surrounding Lake Victoria and partly sequenced each species's DNA to build a family tree. Its branching pattern indicated that Lake Victoria's cichlids are closely related to a species from the Congo River and one from the Upper Nile River watershed, the group reported last year in Nature Communications.A close look at all their genomes suggested the two river species hybridized with each other long ago. Seehausen proposed that during a warm spell about 130,000 years ago, water from tributaries of the Malagarasi River, itself a tributary of the Congo, temporarily flowed into Lake Victoria, bringing Congo fish into contact with Upper Nile fish.

To explore the cichlids' genetic history in more detail, Seehausen and postdocs Matt McGee, Joana Meier, and David Marques have now sequenced 450 whole cichlid genomes, representing many varieties of 150 species from the area's lakes, and from the Congo, Upper Nile, and other nearby watersheds. Clues in the genomes suggest multiple episodes of mixing took place. Periods of drying have repeatedly caused Lake Victoria to disappear, and Seehausen and his team propose that fish in the remaining waterways evolved independently until wetter periods reunited them. This "fission-fusion-fission" process restored genetic diversity each time.

About 15,000 years ago, three groups of fish, themselves products of the ancient hybridizations, came together in Lake Victoria as it filled again. Their ancestry provided the "standing variation" that natural selection could pick from to help the fish adapt to a vast range of niches, producing the cichlid bounty seen today. "Hybridization may turn out to be the most powerful engine of new species and new adaptations," Seehausen says.

"It's mind-blowing," says Dolph Schluter, an evolutionary biologist at The University of British Columbia in Vancouver, Canada. "All the variation required for speciation is already there" in the hybrids.

Studies of other species also suggest standing variation can speed evolution. Biologists trying to understand how marine stickle-backs adapted so quickly to living in freshwater have discovered that a crucial gene variant was already present—in low percentages—in the fishes' marine ancestors. At the meeting, researchers offered similar stories of standing variation jump-starting diversification, for example enabling long-winged beetles to evolve into short-winged ones on the Galápagos Islands. "I've never seen so many talks where you have evidence that genes are borrowed from old variation and further evolution is somehow facilitated by that," Schluter says.

Andrew Hendry, an evolutionary biologist at McGill University in Montreal, Canada, cautions colleagues not to completely dismiss new mutations in rapid species diversification: "What's not clear to me is whether [the role of ancient hybridization] is a general phenomenon," he says.

Regardless, "The implications for conservation are blaring," says Oliver Ryder, who heads conservation genetics efforts at the San Diego Zoo in California. Endangered species are currently managed as reproductively isolated units, and conservationists are reluctant to bolster populations by breeding the threatened animal with related species or populations. Eight years ago, however, a controversial program that mated Florida panthers with Texas cougars helped rescue the former from extinction. Studies such as Seehausen's, says Ryder, suggest that in the long run, hybridization is important to preserving a species's evolutionary potential.

Posted in:

•Plants & Animals

doi:10.1126/science.aav0560

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.Valuable Koi culled due to outbreak of fish herpes

By Kirsty Hough Echo Newspaper

HUNDREDS of fish at a pet shop have had to be killed after contracting herpes.

The Koi at Swallow Aquatics, in London Road, Rayleigh, were found to have Koi herpesvirus (KHV).

KHV is a viral disease which can quickly spread between Koi and can wipe out whole schools of fish.There is no cure and all those affected have to be killed.

A similar outbreak has occurred at Canvey Lake, but it is not thought the two incidents are linked.

KHV poses no risk to human health.

A Fish Health Inspectorate spokesperson said: "Following the detection and confirmation of Koi herpesvirus (KHV) disease at a retail premises in Essex, and in order to prevent the spread of the disease, the infected fish were humanely destroyed, and the holding facilities disinfected.

"The business has worked in close cooperation with the Government's Fish Health Inspectorate in ensuring the effective control of this disease outbreak."

Gavin Marlow, operations manager at Swallow Aquatics, said: "On the 16th of July we were diagnosed with KHV (Koi Herpes Virus) in an isolated area of our premises by CEFAS (Centre for Environment Fisheries and Aquaculture Science).

"We were fully cooperative with the authorities in culling the necessary fish, sterilising and disinfecting the appropriate system.

"We believe the virus to of entered our premises on a shipment we received on the 14th of June 2018.

"We are urging any customers who have purchased Koi from us between this date and the 6th of July to contact us on koicarp@swallowaquatics.co.uk if they have any concerns.

"If you do suspect you have KHV in your pond, then you will also be required by law to contact CEFAS

"We can assure you that we are now back up and running and have been fortunate enough to find a new supplier of stunning Japanese Koi."

For more information on KHV and symptoms, please visit www.gov.uk/government/news/outbreaks-of-koi-herpes-viru

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•This new licence law comes in England inOctober 1st re commercial sales of Animals including Fish.

It`ll take until October to read it!

ANIMAL ACTIVITIES LICENSING ENGLAND

THE ANIMAL WELFARE (LICENSING OF ACTIVITIES INVOLVING ANIMALS) (ENGLAND) REGULATIONS 2018

Part L –

Fish "Coldwater" refers to freshwater ornamental fish species including, but not limited to: Goldfish (all varieties), common carp (including Koi), Tench, Orfe, Rudd and sturgeon species, which are kept in unheated aquaria/vats/ponds; "Tropical freshwater" refers to all those freshwater ornamental fish species which require to be kept in heated aquaria; "Tropical Marine" refers to all those ornamental fish species which require to be kept in sea water and heated aquaria; "Temperate" refers to those species that are suitable for unheated aquaria kept in centrally heated rooms only; "Centralised systems" refers to multiple aquaria or vats which are connected via pipework to a central sump tank and filter. Water is circulated

through the system such that no water travels directly from one aquaria/vat to another but always via a biological filter and (possibly) other devices such as UV, ozone etc. Water quality in such systems is wholly dependent on the management of the whole system. “Standalone system” refers to aquaria or vats which do not share water with others. Filtration (and heating) is provided individually to each aquarium/vat. Water quality in such systems is wholly dependent on the management of each individual aquarium/vat; 3.0 Use, Number and Type of Animal • There are in excess of 4000 species of fish in trade whose welfare 76 • Temperature must be maintained within the optimal range for the fish species housed and kept as stable as possible (see Table L-01 for temperature ranges). Changes in temperature must take place gradually. • For centralised systems, the water temperature must be appropriate to meet the husbandry requirements and temperature range for that fish category i.e. coldwater, tropical freshwater, tropical marine, and will usually be set at the mid-range between different species within a category • Water temperature for temperate fish must never fall below 17oC. Temperate fish are defined as those sold as being suitable for unheated aquariums, kept in centrally heated rooms only. Consideration must be given to the few fish species to which this is considered to be suitable and purchasers must be advised accordingly as to appropriate conditions to meet the welfare needs of the fish. In the case of doubt, licence holders must adopt a cautious attitude (i.e. unless the species is a recognised coldwater species, it must be kept in a heated aquaria i.e. in an aquarium with a thermostatically controlled heater). • Temperatures must be monitored daily and checked weekly with any deviations from the expected range being recorded. At high temperatures it may be necessary to provide supplementary aeration or oxygenation of enclosure water TABLE L-01: TEMPERATURE RANGES OF ORNAMENTAL FISH Category Fish group(s) – by common name Temperature range Coldwater Goldfish (kept in aquariums) 4 to 25°C Fancy goldfish (all varieties) 4 to 25°C Pond fish (including goldfish, Koi carp, Orfe, Rudd & Tench 4 to 24°C Hillstream Loach, White Cloud Mountain, Minnows & Weather Loaches 17 to 23°C Tetras, Rasboras & Danios 18 to 27°C Guppies, Swordtails, Mollies & Platies 18 to 28°C Barbs 20 to 27°C Bettas, Gouramis & Paradise fish Majority will tolerate a range of 22 to 28°C. Paradise fish can tolerate cooler temperatures of 17°C Rainbowfish 21 to 28°C Freshwater sharks (not related to true sharks) 22 to 26°C 77 Tropical Freshwater Dwarf Cichlids Mid range of 23 to 28°C Discus 26 to 30°C American Cichlids e.g. Angelfish, Oscar, Parrot Cichlid, Severum, Firemouth Cichlid, Convict Cichlid & Jack Dempsey 22 to 28°C African Malawi Cichlids 23 to 28°C Freshwater stingrays, Knifefish & Elephant noses 20 to 26°C Piranhas, Snakeheads & Wolf fish 22 to 27°C Catfish e.g. Corydoras, Suckermouth catfish 21 to 28°C Tropical algae eaters e.g. Plecs (Plecostomus) 20 to 28°C Killifish 20 to 26°C Loches (family Cobitidae) 20 to 26°C Large fish e.g. Giraffe catfish, Pacu, Giant Gourami 22 to 28°C Monos, Scats, Archers & Puffers (brackish water) 22 to 30°C Marine Clownfish, Damsels, Chromis & Basslets 23 to 28°C Blennies, Gobies, Jawfish, Dwarf Wrasse & Dartfish 23 to 28°C Butterflyfish, Tangs 23 to 28°C Dwarf angelfish 23 to 28°C Angelfish 23 to 28°C Seahorses & Pipefish 23 to 28°C Morays, Groupers & Triggerfish 23 to 26°C Poisonous & venomous fish e.g. lionfish, scorpionfish, boxfish, frogfish, rabbitfish & pufferfish 23 to 26°C 78 Higher standard • A suitable temperature range for the fish must be displayed on each tank. 5.2 Water quality • Minimum water standards must comply with those outlined in table L-02 • Water quality must be checked weekly and records kept of all tests. 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Light • Fish must be maintained on an appropriate photoperiod (i.e. day/night cycle) as far as possible. • For fish kept in outdoor ponds, vats and stock tanks shade from direct sunlight must be provided, for example, by the provision of plants or other shade Higher standard • For premises with no natural light there must be automated systems and/or procedures to ensure gradual change in light levels. Part L – Fish “Coldwater” refers to freshwater ornamental fish species including, but not limited to: Goldfish (all varieties), common carp (including Koi), Tench, Orfe, Rudd and sturgeon species, which are kept in unheated

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Changes in temperature must take place gradually. • For centralised systems, the water temperature must be appropriate to meet the husbandry requirements and temperature range for that fish category i.e. coldwater, tropical freshwater, tropical marine, and will usually be set at the mid-range between different species within a category • Water temperature for temperate fish must never fall below 17oC. Temperate fish are defined as those sold as being suitable for unheated aquariums, kept in centrally heated rooms only. Consideration must be given to the few fish species to which this is considered to be suitable and purchasers must be advised accordingly as to appropriate conditions to meet the welfare needs of the fish. In the case of doubt, licence holders must adopt a cautious attitude (i.e. unless the species is a recognised coldwater species, it must be kept in a heated aquaria i.e. in an aquarium with a thermostatically controlled heater). • Temperatures must be monitored daily and checked weekly with any deviations from the expected range being recorded. At high temperatures it may be necessary to provide supplementary aeration or oxygenation of enclosure water TABLE L-01: TEMPERATURE RANGES OF ORNAMENTAL FISH Category Fish group(s) – by common name Temperature range Coldwater Goldfish (kept in aquariums) 4 to 25°C Fancy goldfish (all varieties) 4 to 25°C Pond fish (including goldfish, Koi carp, Orfe, Rudd & Tench 4 to 24°C Hillstream Loach, White Cloud Mountain, Minnows & Weather Loaches 17 to 23°C Tetras, Rasboras & Danios 18 to 27°C Guppies, Swordtails, Mollies & Platies 18 to 28°C Barbs 20 to 27°C Bettas, Gouramis & Paradise fish Majority will tolerate a range of 22 to 28°C. Paradise fish can tolerate cooler temperatures of 17°C Rainbowfish 21 to 28°C Freshwater sharks (not related to true sharks) 22 to 26°C 77 Tropical Freshwater Dwarf Cichlids Mid range of 23 to 28°C Discus 26 to 30°C American Cichlids e.g. Angelfish, Oscar, Parrot Cichlid, Severum, Firemouth Cichlid, Convict Cichlid & Jack Dempsey 22 to 28°C African Malawi Cichlids 23 to 28°C Freshwater stingrays, Knifefish & Elephant noses 20 to 26°C Piranhas, Snakeheads & Wolf fish 22 to 27°C Catfish e.g. Corydoras, Suckermouth catfish 21 to 28°C Tropical algae eaters e.g. Plecs (Plecostomus) 20 to 28°C Killifish 20 to 26°C Loches (family Cobitidae) 20 to 26°C Large fish e.g. Giraffe catfish, Pacu, Giant Gourami 22 to 28°C Monos, Scats, Archers & Puffers (brackish water) 22 to 30°C Marine Clownfish, Damsels, Chromis & Basslets 23 to 28°C Blennies, Gobies, Jawfish, Dwarf Wrasse & Dartfish 23 to 28°C Butterflyfish, Tangs 23 to 28°C Dwarf angelfish 23 to 28°C Angelfish 23 to 28°C Seahorses & Pipefish 23 to 28°C Morays, Groupers & Triggerfish 23 to 26°C Poisonous & venomous fish e.g. lionfish, scorpionfish, boxfish, frogfish, rabbitfish & pufferfish 23 to 26°C 78 Higher standard • A suitable temperature range for the fish must be displayed on each tank. 5.2 Water quality • Minimum water standards must comply with those outlined in table L-02 • Water quality must be checked weekly and records kept of all tests. Water testing must take place in stocked tanks. • Centralised systems must be tested weekly. 10% of individually filtered tanks or vats must be tested weekly. On aquaria or vats in which visual inspection indicates unusual behaviour or deaths, and any necessary remedial action must be undertaken and recorded. • Ammonia and nitrite are toxic to fish and their accumulation must be avoided. • Fish must not

be subject to sudden fluctuation in chemical composition of their water, other than for the controlled treatment of disease or as part of a controlled breeding programme. In case of doubt expert advice must be sought. Higher standards • Water quality must be assessed 3 times weekly and documented. • There must be evidence that UV systems are maintained regularly. Light • Fish must be maintained on an appropriate photoperiod (i.e. day/night cycle) as far as possible. • For fish kept in outdoor ponds, vats and stock tanks shade from direct sunlight must be provided, for example, by the provision of plants or other shade Higher standard • For premises with no natural light there must be automated systems and/or procedures to ensure gradual change in light levels. Part L – Fish "Coldwater" refers to freshwater ornamental fish species including, but not limited to: Goldfish (all varieties), common carp (including Koi), Tench, Orfe, Rudd and sturgeon species, which are kept in unheated aquaria/vats/ponds; "Tropical freshwater" refers to all those freshwater ornamental fish species which require to be kept in heated aquaria; "Tropical Marine" refers to all those ornamental fish species which require to be kept in sea water and heated aquaria; "Temperate" refers to those species that are suitable for unheated aquaria kept in centrally heated rooms only; "Centralised systems" refers to multiple aquaria or vats which are connected via pipework to a central sump tank and filter. 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