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FAO SPECIES IDENTIFICATION GUIDE FOR FISHERY PURPOSES

# THE LIVING MARINE RESOURCES OF THE EASTERN CENTRAL ATLANTIC

VOLUME 3

**Bony fishes part 1 (Elopiformes to Scorpaeniformes)**

edited by

**Kent E. Carpenter**

Department of Biological Sciences  
Old Dominion University  
Norfolk, Virginia, USA

and

**Nicoletta De Angelis**

(former FAO, Rome)

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### **SUMMARY**

This multivolume field guide covers the species of interest to fisheries of the major marine resource groups exploited in the Eastern Central Atlantic. The area of coverage includes FAO fishing area 34 and part of 47. The marine resource groups included are bivalves, gastropods, chitons, cephalopods, stomatopods, shrimps, lobsters, crabs, hagfishes, sharks, batoid fishes, chimaeras, bony fishes and sea turtles. The introductory chapter outlines the environmental, ecological, and biogeographical factors influencing the marine biota, and the basic components of the fisheries in the Eastern Central Atlantic. Within the field guide, the sections on the resource groups are arranged phylogenetically according to higher taxonomic levels such as class, order, and family. Each resource group is introduced by general remarks on the group, an illustrated section on technical terms and measurements, and a key or guide to orders or families. Each family generally has an account summarizing family diagnostic characters, biological and fisheries information, notes on similar families occurring in the area, a key to species, a checklist of species, and a short list of relevant literature. Families that are less important to fisheries include an abbreviated family account and no detailed species information. Species in the important families are treated in detail (arranged alphabetically by genus and species) and include the species name, frequent synonyms and names of similar species, an illustration, FAO common name(s), diagnostic characters, biology and fisheries information, notes on geographical distribution, and a distribution map. For less important species, abbreviated accounts are used. Generally, this includes the species name, FAO common name(s), an illustration, a distribution map, and notes on biology, fisheries, and distribution. Each volume concludes with its own index of scientific and common names.

**Production staff:** FAO FishFinder, Marine and Inland Fisheries Branch, Fisheries and Aquaculture Resources Use and Conservation Division, Fisheries and Aquaculture Department, FAO.

**Project coordinators:** P. Oliver (former FAO, Rome), J. Lleonart (former FAO, Rome), M. Lamboeuf (former FAO, Rome), J. Fischer (former FAO, Rome).

**Programme manager:** K. Friedman (FAO, Rome).

**Scientific reviser:** N. De Angelis (former FAO, Rome).

**Editorial assistance:** M. Kautenberger-Longo (former FAO, Rome), E. Biesack (Old Dominion University, Norfolk, VA, USA), B. Polidoro (Arizona State University, Phoenix, AR, USA).

**Desktop publisher:** M. Kautenberger-Longo (former FAO, Rome).

**Scientific illustrator:** E. D'Antoni (FAO, Rome).

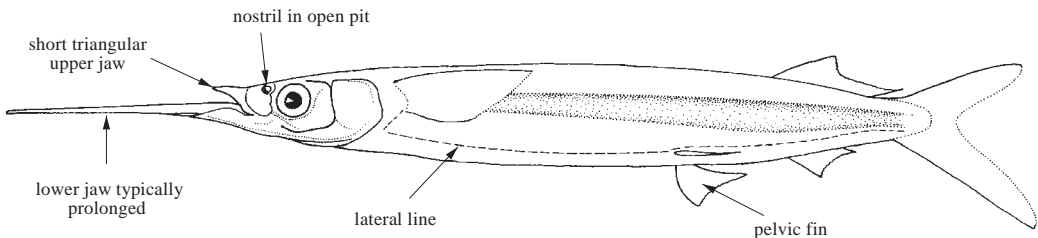
**Cover:** E. D'Antoni (FAO, Rome).

## HEMIRAMPHIDAE

### Halfbeaks

by B.B. Collette, National Marine Fisheries Service Systematics Laboratory,  
National Museum of Natural History, Washington, DC, USA

**Diagnostic characters:** Elongate fishes reaching 40 cm total length, 35 cm standard length with a **prolonged lower jaw and a short triangular upper jaw** (except in *Oxyporhamphus similis*). Nostrils in a pit anterior to the eyes. No spines in fins; dorsal and anal fins posterior in position; pectoral fins usually short; pelvic fins in abdominal position, with 6 soft rays. Lateral line running down from pectoral-fin origin and then posteriorly along ventral margin of body. Scales moderately large, cycloid (smooth), easily detached. **Colour:** these fishes live at the surface and are protectively coloured for this mode of life by being green or blue on the back and silvery white on the sides and ventrally. Tip of the lower jaw bright red or orange in most species.

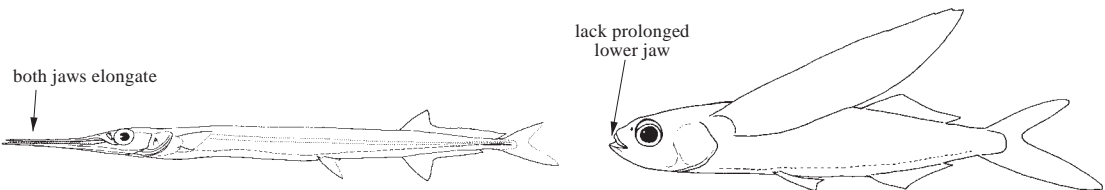


**Habitat, biology, and fisheries:** Most species are marine, but some inhabit freshwaters. Omnivorous, feeding on floating sea grass, crustaceans and small fishes. Eastern central Atlantic species are all oviparous. Eggs with filaments that attach to sea grasses or algae. Halfbeaks are prone to leap and skitter at the surface and one offshore species, *Euleptorhamphus velox* leaps out of the water and glides like a flyingfish. Although at present these fishes are not of great commercial importance, most species are regularly found in local markets. The flesh is excellent and halfbeaks are utilized as food in many parts of the world. They are mainly caught with seines and pelagic trawls and utilized fresh, dried-salted, smoked and for fishmeal and oil. They are also important as bait for gamefishes like marlins.

#### Similar families occurring in the area

**Belonidae** (needlefishes): both upper and lower jaws elongate and armed with needle-sharp teeth.

**Exocoetidae** (flyingfishes): lack the prolonged lower jaw characteristic of most halfbeaks; pectoral fins or both pectoral and pelvic fins enlarged and used for aerial gliding.

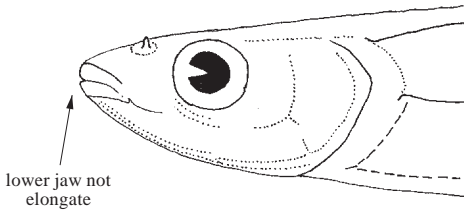


**Belonidae**

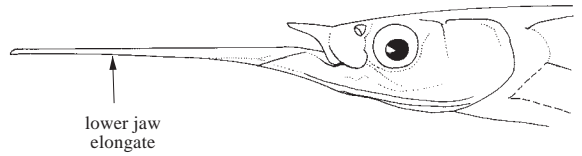
**Exocoetidae**

**Key to species of Hemiramphidae occurring in the area**

- 1a. Lower jaw not noticeably elongate (Fig. 1); total gill rakers on first arch 30 to 35; pectoral-fin rays 11 to 13 . . . . . ***Oxyporhamphus similis***
- 1b. Lower jaw distinctly elongate (Fig. 2); total gill rakers on first arch 25 to 46; pectoral-fin rays usually 7 to 12 . . . . . → 2



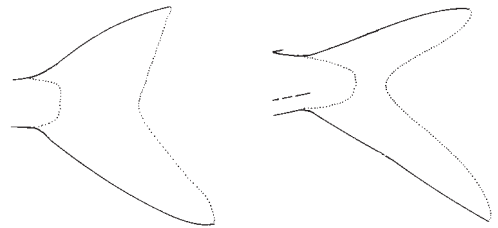
**Fig. 1 lateral view of head**



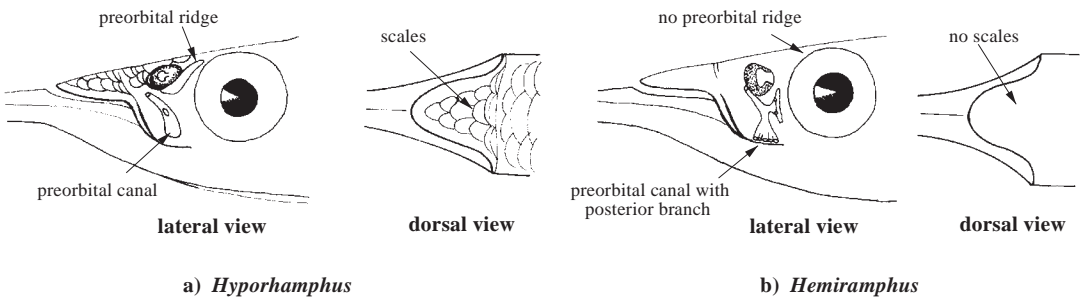
**Fig. 2 lateral view of head**

- 2a. Dorsal-fin rays 21 to 25; anal-fin rays 19 to 24; pectoral fins very long; pectoral-fin rays usually 7 to 9 . . . . . ***Euleptorhamphus velox***
- 2b. Dorsal-fin rays 12 to 17; anal-fin rays 10 to 18; pectoral fins short to moderate; pectoral-fin rays 9 to 12 . . . . . → 3

- 3a. Caudal fin emarginate or slightly forked (Fig. 3a); scales present on snout; preorbital ridge well developed, preorbital canal simple, without posterior branch (Fig. 4a); anal-fin rays 13 to 17, usually 15 or 16 . . . . . ***Hyporhamphus picarti***
- 3b. Caudal fin deeply forked (Fig. 3b); scales absent on snout; preorbital ridge absent, preorbital canal with posterior branch (Fig. 4b); anal-fin rays usually 10 to 13 . . . ***Hemiramphus*** → 4




**Fig. 3 caudal fin**








**Fig. 4 detail of head**

- 4a. Pectoral fins moderate, reaching beyond anterior margin of nasal pit when folded forward; anal-fin rays 10 to 13, usually 11 or 12; upper caudal lobe blue in life . . . . . ***Hemiramphus balao***
- 4b. Pectoral fins short, not reaching nasal pit when folded forward; anal-fin rays 12 to 14, usually 13; upper caudal lobe reddish orange in life . . . . . ***Hemiramphus brasiliensis***

**List of species occurring in the area**

The symbol  is given when species accounts are included

-  *Euleptorhamphus velox* Poey, 1868.
-  *Hemiramphus balao* Lesueur, 1821.
-  *Hemiramphus brasiliensis* (Linnaeus, 1758).
-  *Hyporhamphus picarti* (Valenciennes, 1847).
-  *Oxyporhamphus micropterus similis* Bruun, 1935.

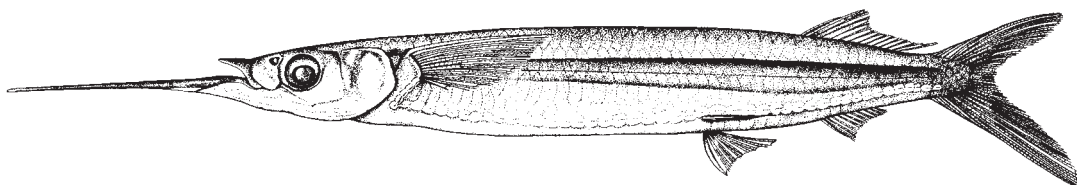
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***Hemiramphus balao*** Lesueur, 1821

**Frequent synonyms / misidentifications:** None / *Hemiramphus brasiliensis* (Linnaeus, 1758).

**FAO names:** En – Balao halfbeak; Fr – Demi-bec balaou; Sp – Agujeta balajú.



**Diagnostic characters:** An elongate fish with a greatly prolonged beak-like lower jaw. **Upper jaw short, triangular and scaleless; preorbital ridge (bony ridge under nostril) absent.** Total number of gill rakers on first gill arch 31 to 39 (average 37.2), 7 to 10 on upper and 22 to 29 on lower limb of arch. No spines in fins; dorsal-fin rays 11 to 15, usually 13 or 14; **anal-fin rays 10 to 13, usually 11 or 12; pectoral fins long, reaching beyond anterior margin of nasal pit when folded forward,** and with 10 to 12, usually 11, rays; **caudal fin deeply forked,** lower lobe much longer than upper. Predorsal scales 37 to 41. Total vertebrae 54 to 56. **Colour:** dark bluish above, silvery white below. Beak black with fleshy red tip; **upper lobe of caudal fin bluish violet, lower lobe bluish.** Juveniles with broad vertical bars on body past 175 mm standard length. Pigment on the pelvic fins of juveniles concentrated proximally, distally in *H. brasiliensis*; tip of lower caudal lobe unpigmented.

**Size:** Maximum to at least 40 cm total length; about 28 cm standard length (from tip of upper jaw to base of caudal fin); common to 35 cm total length.

**Habitat, biology, and fisheries:** An inshore, surface-dwelling fish forming sizeable schools. Food is composed largely of zooplankton, particularly copepods, decapods, siphonophores, and polychaetes. Oviparous. Batch fecundity about 3 700 hydrated eggs. Eggs bear long filaments that attach the eggs to seagrasses or algae. Usually taken along with *Hemiramphus brasiliensis*. Caught with beach and purse seines and pelagic trawls. Utilized fresh, dried salted, and for fishmeal and oil and as bait for the billfish sports fishery. Separate statistics are not reported for this species.

**Distribution:** In the eastern Atlantic, from the Canary Islands and from Côte d'Ivoire southward to Luanda, Angola. Also found in the western Atlantic from off New York southward through the Gulf of Mexico and Caribbean Sea to Santos, Brazil.

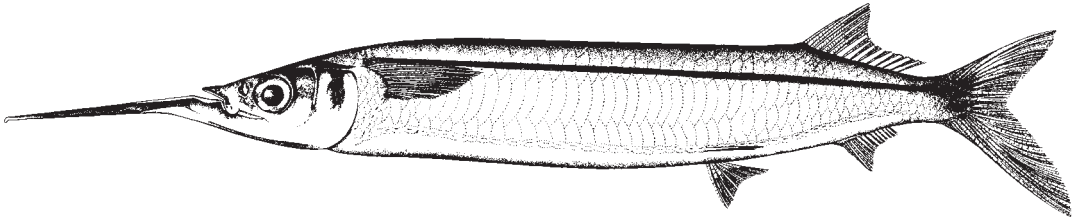




***Hemiramphus brasiliensis*** (Linnaeus, 1758)

**Frequent synonyms / misidentifications:** None / *Hemiramphus balao* Lesueur, 1821.

**FAO names:** En – Ballyhoo halfbeak; Fr – Demi-bec brésilien; Sp – Agujeta brasileña.



**Diagnostic characters:** An elongate fish with a greatly prolonged beak-like lower jaw. **Upper jaw short, triangular and scaleless; preorbital ridge (bony ridge under nostril) absent. Total number of gill rakers on first gill arch 28 to 36 (average 32.8),** 7 to 10 on upper and 20 to 26 on lower limb of arch. No spines in fins; dorsal-fin rays 12 to 15, usually 13 or 14; **anal-fin rays 12 to 14, usually 13; pectoral fins short, not reaching to nasal pit when folded forward** and with 10 to 12, usually 11, rays; **caudal fin deeply forked, lower lobe much longer than upper.** Predorsal scales 35 to 38. Total vertebrae 52 to 55. **Colour:** dark bluish green above, silvery white below. Beak black with fleshy red tip; **entire upper lobe of caudal fin yellowish orange,** lower lobe dusky. Broad vertical bars on body of juveniles present until about 120 mm standard length. Pigment on the pelvic fins of juveniles concentrated distally on the fin, proximally in *H. balao*; tip of lower caudal lobe pigmented.

**Size:** Maximum to at least 40.5 cm total length; 35 cm standard length (from tip of upper jaw to base of caudal fin); common to 35 cm total length.

**Habitat, biology, and fisheries:** An inshore, surface-dwelling fish forming sizeable schools. Adults feed mostly on seagrasses, smaller fish on planktonic decapods, copepods and siphonophores. Oviparous. Batch fecundity about 1 200 hydrated eggs about 2.4 mm in diameter. Eggs with thread-like filaments that attach the eggs to seagrasses or algae. Usually taken along with *Hemiramphus balao*. Caught with setnets, beach seines, pelagic trawls and on line gear. Utilized fresh, smoked, dried-salted and for fishmeal and oil and as bait for the billfish sports fishery. Separate statistics are not reported for this species.

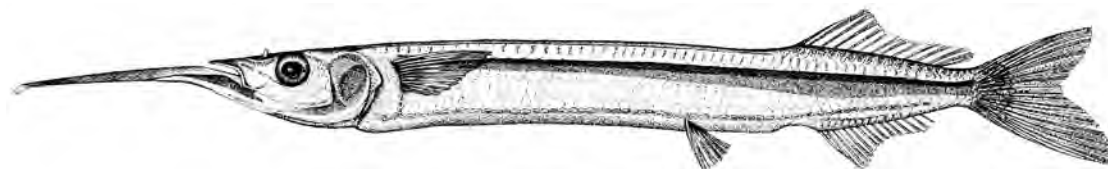
**Distribution:** In the eastern Atlantic, from the Cape Verde Islands and Dakar southward to Luanda, Angola. Also found in the western Atlantic from Woods Hole, Massachusetts southward through the Gulf of Mexico and Caribbean Sea to Rio de Janeiro.



***Hyporhamphus picarti*** (Valenciennes, 1847)

**Frequent synonyms / misidentifications:** None / *Hyporhamphus unifasciatus* (Ranzani, 1841).

**FAO names:** En – African halfbeak; Fr – Demi-bec africain; Sp – Agujeta africana.



**Diagnostic characters:** An elongate fish with a greatly prolonged beak-like lower jaw. **Upper jaw short, triangular and scaly; preorbital ridge (bony ridge under nostril) present. Total number of gill rakers on first gill arch 28 to 36** (average 32.0), 7 to 11 on upper and 18 to 25 on lower limb of arch. No spines in fins; dorsal and anal fins without scales; dorsal-fin rays 13 to 16, usually 14 or 15; **anal-fin rays 13 to 17, usually 15 or 16**; pectoral fins short, not reaching to nasal pit when folded forward and with 10 to 12, usually 11, rays; **caudal fin emarginate to slightly forked**. Total vertebrae 46 to 49. **Colour:** greenish above, silvery white below; 3 distinct narrow black lines along middle of back from head to dorsal fin; fleshy tip of beak red; caudal fin pale, dark-edged. Juveniles lack the broad vertical bars present in species of *Hemiramphus*.

**Size:** Maximum to about 18 cm total length; about 14 cm standard length (from tip of upper jaw to base of caudal fin); common to 10 cm standard length.

**Habitat, biology, and fisheries:** An inshore schooling species, frequently entering estuaries. Omnivorous, feeding on algae as well as on small animal organisms. Caught with beach seines and pelagic trawl. Utilized fresh, dried, salted and for fishmeal and oil. Separate statistics are not reported for this species.

**Distribution:** An eastern Atlantic species known from Morocco and Dakar southward along the coast of the Gulf of Guinea to Luanda, Angola and also from the southern shores of the Mediterranean Sea from Lebanon and Israel south and west to Gibraltar.



***Euleptorhamphus velox* Poey, 1868**

**En** – Flying halfbeak; **Fr** – Demi-bec volant; **Sp** – Agujeta voladora.

Maximum size 28.1 cm standard length. An offshore epipelagic species. Eaten by oceanic fishes and birds. Of no fisheries interest. Cape Verde Islands and Gulf of Guinea: Sierra Leone to Nigeria. Also found in the western Atlantic from Massachusetts throughout the Gulf of Mexico and Caribbean Sea south to Recife, Brazil.



***Oxyporhamphus micropterus similis* Bruun, 1935**

**En** – Atlantic smallwing flyingfish.

Maximum size 18.5 cm standard length. A small epipelagic offshore species of no fisheries interest. Widespread in tropical and subtropical waters of the Atlantic, in the eastern Atlantic from 20°N south to 20°S; in the western Atlantic north to 40°N, in the Gulf of Mexico and Caribbean Sea south at least to the equator. Placed in the Exocoetidae by some authors.

