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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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The living marine resources of the Eastern Central Atlantic. Volume 3: Bony fishes part 1 (Elopiformes to Scorpaeniformes).

FAO Species Identification Guide for Fishery Purposes, Rome, FAO. pp. 1511–2342.

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).

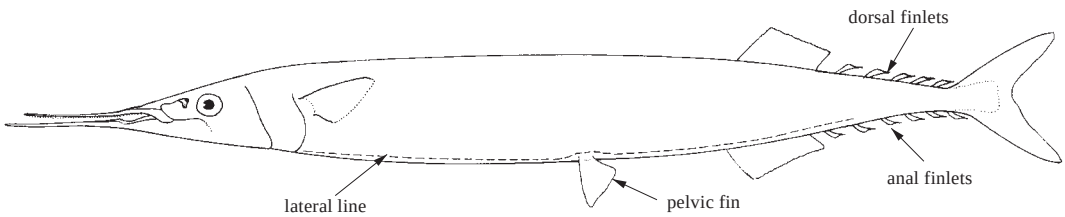
Cover: E. D'Antoni (FAO, Rome).

SCOMBERESOCIDAE

Sauries

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

Diagnostic characters: Elongate, slender fishes, reaching 46 cm standard length. Body moderately compressed, **the greatest body depth about 10% (7–12%) of standard length**. **Jaws prolonged as slender, fragile beaks in adults, the lower jaw always longest**; all teeth minute; nostrils set in pits close before eyes. No spines in fins; **dorsal and anal fins far back on body, the anal slightly in front of dorsal**; **both fins followed by 4 to 7 separate finlets** (this feature, typical of the mackerels and tunas - Scombridae, combined with the slender body and posteriorly placed fins typical of the pikes – Esocidae, gave rise to the generic name *Scomberesox*); in adults, the first few finlets are often difficult to distinguish from the last rays of the main fins; pectoral fins high, above lateral midline of body at top of gill cover opening; **pelvic fins originating at about midpoint of body, the distance between pelvic and anal-fin bases being about half the distance between pelvic and pectoral-fin bases**; lower lobe of caudal fin only slightly longer then upper lobe. **No keels on caudal peduncle**. **Lateral line low, running along ventral profile**, but not reaching to base of caudal fin. Scales small to moderate-sized, cycloid, easily shed; scales on sides vertically oblong, the circuli in straight vertical lines; scales of back and of narrow ventral area (between lateral lines) rounded, the circuli curving with shape of scale. **Colour**: in life, olive green to brownish above, silvery below; usually a silvery band (dusky in preservative) with a narrow dark lower edge, extending along sides just below darker back.



Habitat, biology, and fisheries: Small to medium-sized, epipelagic fishes which readily come to a light at night. *Scomberesox saurus* may occur in large schools and habitually skips over the surface, much like the flyingfishes, particularly when fleeing predators. The food of both species is composed of small zooplankton organisms commonly found at or near the surface. These fishes are not of great commercial importance off the West African coast, since large schools (especially of *S. saurus*) are rather sporadic in occurrence. However, several nations fishing in this area consider at least *S. saurus* as being of potential interest.

Similar families occurring in the area

Belonidae (needlefishes) and Hemiramphidae (half-beaks): superficially similar in having long, slender bodies, dorsal, pelvic, and anal fins in similar positions, and one or both jaws prolonged into a beak in adults. However, both these families lack separate finlets behind dorsal and anal fins.

Other families having separate finlets: pelvic fins are forward, about below bases of pectoral fins; jaws not beak-like; one or more keels on caudal peduncle.

Belonidae

Hemiramphidae

Key to species of Scomberesocidae occurring in the area

1a. Pectoral-fin rays 13 or 14 (seldom 12 or 15); gill rakers on first arch 34 to 51; both jaws of adults prolonged as slender beaks, the lower only slightly longer; all teeth villiform, in narrow bands throughout the length of both jaws; scales along sides of body 128 to 148; lateral line extending to above one of the first few anal finlets (Fig. 1) . ***Scomberesox saurus***

1b. Pectoral-fin rays 10 or 11; gill rakers on first arch 22 to 24 (seldom 19 or 26); both jaws of adults prolonged as slender beaks, the lower about twice as long as upper; all teeth minute, conical, in a single row along entire margin of upper jaw and on posterior margins of lower jaw (teeth present, but very sparse anteriorly); scales along sides of body 77 to 91; lateral line not extending much past bases of pelvic fins (Fig. 2) . . . . . ***Scomberesox simulans***

Fig. 1 ***Scomberesox saurus***

Fig. 2 ***Scomberesox simulans***

List of species occurring in the area

The symbol is given when species accounts are included.

Scomberesox saurus (Walbaum, 1792).
Scomberesox simulans (Hubbs and Wisner, 1980).

References

Collette, B.B. 2004. Family Scomberesocidae Rafinesque 1815 – sauries. *California Academy of Sciences Annotated Checklists of Fishes*, No. 21, 6 p.

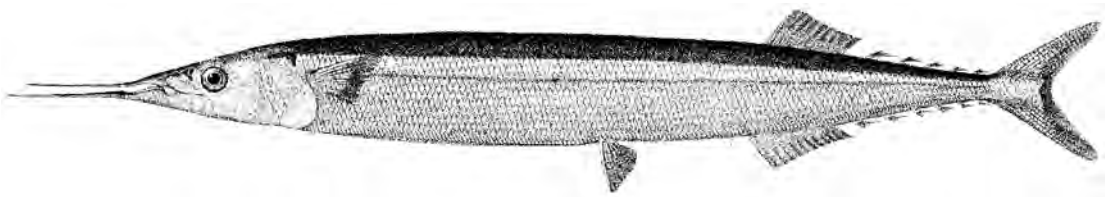
Hardy, J.D., Jr. & Collette, B.B. 2005. Scomberesocidae: sauries. In W.J. Richards, ed. *Early states of Atlantic fishes: an identification guide for the western central North Atlantic*. CRC Press, Chapter 76, pp. 905–907.

Hubbs, C.L. & Wisner, R.L. 1980. Revision of the sauries (Pisces, Scomberesocidae) with descriptions of two new genera and one new species. *Fishery Bulletin, U.S.*, 77: 521–566.

Scomberesox saurus (Walbaum, 1792)

Frequent synonyms / misidentifications: None / None.

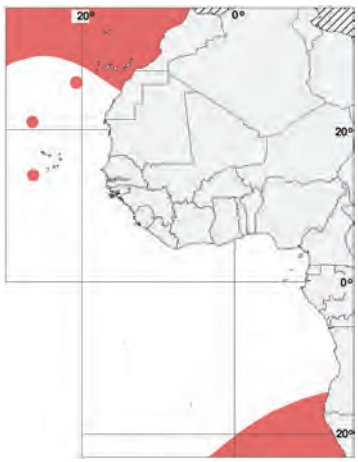
FAO names: En – Atlantic saury; **Fr** – Balaou atlantique; **Sp** – Paparda del Atlántico.



Diagnostic characters: Body elongate, **moderately compressed, the width contained about 2.0 (1.7 to 2.3) times in the depth**. Both jaws of adults prolonged as slender, fragile beaks, **the lower only slightly longer than the upper and bluntly tipped with soft tissue**; in adults of 20 cm or more, the snout length averages about 1.6 (1.5 to 1.7) times in head length but in smaller individuals (7 to 15 cm) this length is contained about 2.0 (1.8 to 2.3) times in head; teeth villiform, **in narrow bands extending to near tips on each jaw**; **gill rakers on first arch 34 to 51**. Total dorsal-fin rays (including the 5 to 7 finlets) 16 or 17 (seldom 15 or 18); total anal-fin rays (including the 5 to 7 finlets) 18 to 21 (seldom 17); **pectoral fin-rays 13 or 14** (seldom 12 or 15); pelvic-fin rays always 6. **Scales along sides of body 128 to 148**. **Lateral line extending only to above one of the first few anal finlets**. **Ovaries paired**; **swimbladder present**. Vertebrae: 39 to 43 + 24 to 28 = 64 to 70 total. **Colour**: In life, olive to dark green or light brown above in adults (bluish in young); a silvery band (brownish in preservative), often with a narrow dark lower edge, about the width of eye, extends from head to near tail just below the dark area of back; sides and belly silvery, often with a brassy-golden wash; usually a small green spot below bases of pectoral fins (not evident in preserved fish); dorsal fin (including finlets) and caudal fin greenish; other fins lightly flecked with green (the green is brownish in preservative). Coloration appears to vary slightly, possibly with age or geographic area. Young fry have dark blue backs and silvery sides.

Size: Maximum to 46 cm standard length; statements in literature of 50 to 76 cm are not supported by preserved specimens.

Habitat, biology, and fisheries: Oceanic, primarily surface-schooling fishes. Habitually skip over the surface, presumably to escape predators. Frequently enter bays and estuaries. Spawning takes place mainly in the open ocean, in warm-temperate water. One of the most abundant epipelagic planktovores inhabiting the open parts of the Atlantic Ocean, feeding mainly on siphonophores, copepods, euphausiids, and amphipods. Saury perform feeding migrations from spawning areas to cool-temperate, plankton-rich waters. Small catches made by Spain and Morocco in the northern part of the area. Of limited commercial importance but of potential commercial interest. No separate statistics.

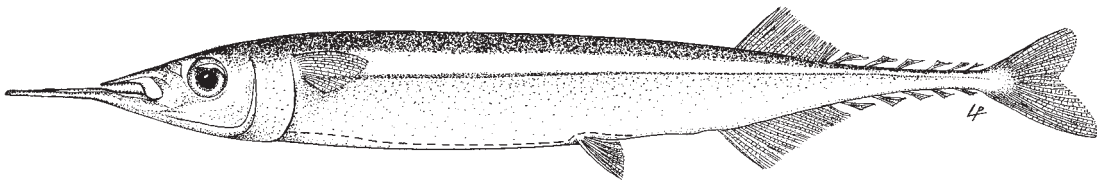


Distribution: Divided into northern and southern subspecies, based mainly on differences in number of gill rakers: *Scomberesox saurus saurus* in the North Atlantic Ocean and Mediterranean Sea; gill rakers range from 36 (seldom 34 or 35) to 41. *Scomberesox saurus scombroides* (Richardson, 1843) in all southern oceans; gill rakers range from 40 to 49 (seldom as few as 39 or as many as 50 or 51). *S. s. saurus*, occurs only in the northern portion of the area, above 30°N, with a few young individuals known to about 15°N. Outside the area, this subspecies occurs in the Mediterranean Sea and across the North Atlantic, to about 45°N, but it can range northward to Newfoundland, Iceland, the British Isles, and (rarely) along Norway and into the Barents, White and Kara seas, following the seasonal movements of temperate water masses. Neither subspecies known to penetrate the warm tropical areas.

Scomberesox simulans (Hubbs and Wisner, 1980)

Frequent synonyms / misidentifications: *Scomberesox* sp. Parin, 1968; *Nanichthys simulans* Hubbs and Wisner, 1980 / None.

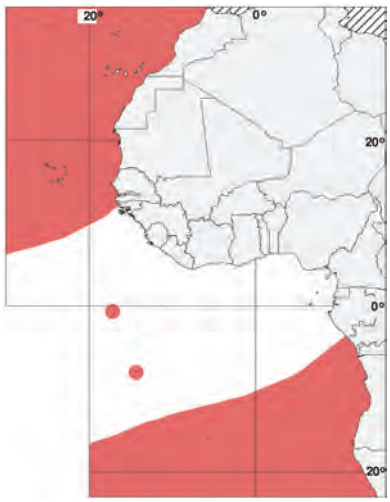
FAO names: En – Dwarf saury; **Fr** – Balaou nain; **Sp** – Paparda enana.



Diagnostic characters: Body strongly compressed (except in gravid females), the width contained about 3 (2.7 to 3.4) times in the depth. Both jaws of adults prolonged as slender, fragile beaks, **but upper jaw only about half as long as the lower** (measured from anterior margin of eye); all teeth minute, conical, **in a single row along entire margin of upper jaw and on posterior margins of lower jaw** (teeth present, but very sparse anteriorly); gill rakers on first arch 22 to 24 (seldom as few as 19 or as many as 25 or 26). Total dorsal-fin rays (including the 5 to 7 finlets) 14 to 16; total anal-fin rays (including 5 to 7 flnlets) 19 to 20 (seldom 17 or 18); **pectoral fin-rays 10 or 11**. **Scales along sides of body 77 to 91**. **Lateral line not extending much past the base of pelvic fin**. **Ovary single; swimbladder absent**. **Colour**: greenish above, silvery below; a narrow silvery band (brownish in preservative), often with a narrow darker lower edge, extends along body just below the dark area of back from gill cover to near caudal fin; fins only lightly, if at all, flecked with green (brownish in preservative).

Size: Maximum to 12.6 cm total length, but very few individuals exceed 10 cm.

Habitat, biology, and fisheries: An oceanic, surface-schooling fish that comes readily to a light at night; little else is known of its habits; apparently gregarious, as many individuals may be taken with dipnets using night lights, and in single tows in pleuston nets. Spawning habits unknown, but presumably similar to those of *S. saurus*. Feeds on small planktonic forms; feeding migrations are unknown. Although common in the area, apparently not fished commercially at present; neither the schooling and migratory habits nor the actual abundance of this species are sufficiently well known to determine whether it may be considered a potential resource.



Distribution: Common throughout the area, except near the equator; apparently antitropical in distribution, since few specimens have been recorded between about 8°N and 8°S. Outside the area, it ranges northward to about 40°N, westward to about 45°W, (across to southern Brazil and northern Argentina) and southward to about 35°S. It also occurs, but is seldom captured, in the tropical Indian Ocean. Not known from the Mediterranean Sea or the Pacific Ocean.