from Asia still is insufficient, although much progress in identifying fossil shark assemblages has been accomplished in the last two decades. In China, the known fossil record of hybodontiform sharks extends back into the Palaeozoic and a low-diversity assemblage was documented from the P/T-boundary in addition to few Mesozoic records.
Here, we document a small Late Jurassic hybodont shark assemblage from the Qigu Formation (Oxfordian) at Liuhuanggou in the southern Junggar Basin. It is of low diversity containing remains of three taxa based on isolated teeth. One of the species is assumed to be close to the hybodontid *Hybodus huangnidanensis* in tooth morphology. Although this taxon was previously described from Middle Jurassic estuarine deposits of South China, the available material is too fragmentary for an unambiguous determination. The other taxa represent two species of a previously unknown genus: *Jiaodontus montaltissimus* and *Jiaodontus vedenemus*. This genus is assigned to the Lonchidiidae and represents very small endemic species seemingly restricted to the Junggar Basin.
The teeth superficially resemble those of other lonchidiids such as *Parvodus* and *Vectiselachos*, but differ in several aspects including the morphology of cusp and cusplets and the ornamentation pattern. Both species assigned to *Jiaodontus* are very similar, however the asserted dental differences are interpreted as being related different resource adaptations for reducing intra-generic competition. Additionally, two different morphotypes of dermal denticles of hybodontiforms, possibly representing two species, are documented.
The bonebed from which the teeth were recovered most likely accumulated under freshwater conditions and the three shark taxa are considered to have been adapted to this regime. The oxygen isotope analysis of the tooth enameloid of H. sp. cf. *H. huangnidanensis* yielded low $\delta^{18}O_{PO4}$ values (9.7 ± 0.4‰, S.D., n = 5) indicating that at least this taxon was completely adapted to freshwater. This is in good accordance with the depositional setting and sedimentological results.

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First Mesozoic chimaeroid fish record (Holocephali, Chimaeriformes) from the Iberian Peninsula with comments on the Palaeoecology of *Ischyodus*

Stefanie Klug[1] & Jürgen Kriwet[2]

Fossil cartilaginous fishes from the Mesozoic of the Iberian Peninsula have been only sporadically considered in the past. For instance, hybodontiform sharks were described from the Triassic of NE Spain, the Late Jurassic of Portugal and the Early Cretaceous of N and NE Spain. Neoselachian remains are known from the Late Jurassic of Portugal, the Late Jurassic and the Early Cretaceous of NE Spain and the Late Cretaceous of SE and N Spain. Fossil holocephalans, which represent the sister group of Elasmobranchii (Hybodontiformes + Neoselachii) and are the plesiomorphic group within Chondrichthyes, conversely, have not been reported from Portugal or Spain up to date. We present here the first Mesozoic holocephalan record from the Iberian Peninsula, which are assigned to *Ischyodus*.
The remains of *Ischyodus* were recovered from early Kimmeridgian (Late Jurassic) deposits in the Iberian Basin (Iberian Chain), which is located in NE Spain. It consists of a mandibular tooth plate, two incomplete and isolated symphyseal tritoral rods, and almost 20 frontal tenacular denticles. Based on the size and morphological features, the material represents different ontogenetic stages. The mandibular tooth plate is the smallest of a chimaeroid that has been described up to now. The unworn tritoral pads and unexposed symphyseal tritor as well as the little developed dentine layer, in which the tritors are embedded, support its embryonic origin. Additional isolated and fragmentary symphyseal tritoral rods, which are almost as large as the tooth plate, and isolated frontal tenacular spines of adults also occur in the fossiliferous strata. Unfortunately, it is not possible to assign these remains to any known species although close taxonomic connections to *Ischyodus egertoni*, which was a common species inhabiting the epicontinental seas covering wide areas of England and France during the Kimmeridgian are most likely.
In the Late Jurassic, extensive shallow epicontinental seas covered wide areas of Middle Europe and several important fish localities in England, France, and Germany

containing rare remains of *Ischyodus* and other chimaeroids correlate with these shallow marine environments. The occurrence of an embryonic mandibular tooth plate very close to the coast of the Iberian Massif in the Kimmeridgian is persuasive evidence for inshore migration behaviour of this Jurassic chimaeroid similar to the condition found in several extant taxa. This also supports the interpretation that Late Jurassic chimaeroids most probably were not shallow water forms but only seasonally or occasionally invaded shallow near-coastal and epicontinental seas. This also might be the reason for the comparably low diversity and limited geographic distribution of chimaeroids during the Kimmeridgian. Therefore we hypothesize that *Ischyodus* spp. generally lived in deeper waters of the oceans and only migrated inshore for spawning, which is supported by the restricted occurrences of Late Jurassic chimaeroids and studies on living representatives.

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Studentenpreisposter

Early Triassic *Saurichthys* from Greenland and Madagascar

Ilja Kogan[1]

The presence of *Saurichthys* in the Early Triassic Wordie Creek Formation of East Greenland (Griesbachian) has been reported for more than 80 years. A preliminary survey of the material stored at the Natural History Museum of Denmark, Copenhagen, indicates that at least two different species have been collected, probably from two distinct stratigraphic levels within the Wordie Creek Formation (fish zones 2 and 5, respectively). Both should perhaps be described as new species; one of them, coming from the fish zone 2, is represented with skulls and well-preserved postcranial remains.

Saurichthys madagascariensis from the lower Sakamena Group (Dienerian-Smithian) of the Diego basin (NW Madagascar) has also been known since 1930's, but only skulls and smaller body fragments have been described. A complete skeleton stored in the Muséum National d'Histoire Naturelle, Paris, allows the first comprehensive anatomical description. Both Early Triassic species exhibit a remarkably complete squamation consisting of mid-ventral, mid-dorsal, paired mid-lateral, and several dorso-lateral and ventro-lateral rows of scales at least in the anterior body part. Scales of the mid-lateral row are high and subdivided into two parts by the course of the lateral line sensory canal: a dorsal part, ornamented mostly with ganoin tubercles or horizontal ridges, and a ventral part, ornamented with vertical ridges of ganoin. The mid-ventral and mid-dorsal scales are broad and oval to drop-shaped in the Greenland species and rather heart-shaped in *S. madagascariensis*; in both, they are ornamented with tubercles and bear on their inside a prominent longitudinal keel. The dorsal and ventral fins have lepidotrichia consisting of up to 6–7 segments and bifurcating distally, and are supported by up to 12 endoskeletal radials; in *S. madagascariensis*, the first two radials are distally fused. The caudal fin of *S. madagascariensis* is less symmetrical than in all other known saurichthyids; it consists of about 50 lepidotrichia, segmented at least 8 times and bifurcating distally. Both lobes of the caudal fin and all other fins bear fringing fulcra. The preservation of the Greenland species is more fragmentary, but fringing fulcra may also be present on the dorsal and anal fin. In both species, the vertebral column consists of neural arches with short anteriorly pointing praezygapophyses and long posterodorsally ascending neural spines, and box-shaped neural arches separated by foramina. Apart from the shape of mid-dorsal and mid-ventral scales, an obvious difference concerns the shape of the opercular, which has a marked posterior projection in *S. madagascariensis* but is more rounded in the Greenland species.

The nearly contemporaneous presence of these two species with similar morphology in the Northern and in the Southern hemisphere is of interest for the early evolution of the genus *Saurichthys*, suggesting a possible primitive condition of squamation, vertebral column, fins and fin supports; however, the occurrence of *Saurichthys toxolepis* and *S. dayi*, both with unsegmented lepidotrichia, probably in the Smithian (within the range Griesbachian to Spathian) of British Columbia and Alberta, implies that the segmentation of fin rays might be of functional rather than of phylogenetic significance.

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