

## A hypothetical query

- You note a reduction in the number of branchiostegal rays in a zebrafish mutant and ask "is this bone variable in number among species in nature?"
- You go to a Phenoscape to visualize character states mapped onto a phylogenetic tree
  - Most Ostariophysi have 3 rays, but you see that a reduction has occurred multiple times: in solenostomids and syngnathids (ghost pipefishes and pipefishes), giganturids (telescope fishes) and saccopharyngoid (gulper and swallower) eels
- You then ask "what parallel changes have occurred?"
  - Loss of the swimbladder, pelvic fins, and scales
  - Elongation of the mandibular or hyoid arches
  - Reduction or loss of the opercle in syngnathids and saccopharyngoids.
  - A variety of other bones and soft tissues are lost or greatly modified















- The only previous NCBO taxonomy ontology was based on the NCBI taxonomy
  - TTO uses names from CoF, relations from CToL
  - Have separated the taxonomic rank ontology
- Assignments are to specimens
  - Species may be not yet determined
  - Species may be not yet named
  - Specimen be from a mixed collection

## **Evidence Code Ontology**

- Inferred from Phenotypic Similarity
  - → Inferred from Compositional Similarity (ICS)
  - └→Inferred from Developmental Similarity (IDS)
  - └→ Inferred from Morphological Similarity (IMS)
  - └→Inferred from Positional Similarity (IPS) -
  - └→ Inferred from Gene Expression Similarity (IGES)
- Inferred from Computational Analysis
   → Inferred from Phylogeny (IP)





			2 - D	× Term Info	opercle		
Publication 1	link and Eink 1981			opercle			1 2 2
Publication	Ink and Fink 1961						N / 2
Valid Name	Opsariichthys uncirostris						
Publication Name				⊤ Sync	nyms (1)		
Taxon Comments				RELA	TED opercles		
				v Links	(4)		
Entity	ipercle				Baronto		
Quality	ectangular						
Spatial Aspect					e_a <u>dermal b</u>	one cranium, ope	rcular flap, dorsal hvoid
				he	arch		
Additional Entity					Children	1	
Management [							
Measurement							
Unit				A ∀ DBxt	efs (2)		
Unit			)4 +	ZFA:000 7FIN:70	efs (2) 0250 B-ANAT-0111	13-181	
Apposition Table (Main)	Taxon List		).+>	ZFA:000 ZFIN:20	efs (2) 0250 B-ANAT-0111	13-181 n Table (Specime	ens) ens
Annotation Table (Main)	Taxon List		)4 +	ZFA:000 ZFIN:20	efs (2) 0250 B-ANAT-0111 Annotation	13-181 n Table (Specime	ens) r
Annotation Table (Main)	Taxon List		)4 F	* DBxt ZFA:000 ZFIN:20	efs (2) 0250 B-ANAT-0111 Annotation	13-181 n Table (Specime	ens) e
Annotation Table (Main)	Taxon List		)4 1	* DBxr ZFA:000 7FIN:70	efs (2) 0250 R-ANAT-0111 Annotation	13-181 n Table (Specime 	ens) r
Annotation Table (Main) Annotation Table (Main)	Taxon List	Quality	Additional Entity		efs (2) 0250 B-ANAT-01111 Annotation Collection MCZ	13-181 n Table (Specime 	ens) e
Annotation Table (Main) Annotation Table (Main) Annotation Table (Main)	Taxon List	Quality	Additional Entity		Annotation Collection MCZ	13-181 n Table (Specime 	ens) P
Annotation Table (Main)	Taxon List	Quality ausent absent	Additional Entity	ZFA.000 ZFIN 77	efs (2) 0250 B-ANAT-0111 Annotation Collection MCZ	13-181 n Table (Specime 	ens) r
Annotation Table (Main) Annotation (Ma	Taxon List	Quality ausenit absent present	Additional Entity	V DBxt     ZFA-000     ZFIN-27     C     Measure	efs (2) 0250 B-ANAT-01111 Annotation Collection MCZ	13-181 <b>Table (Specime</b> <b>Specimen II</b> 54388	nns) r
Annotation Table (Main) Annota	Taxon List	Quality ausent present increased size	Additional Entity	C = 0 ×	Annotation Collection MCZ	13-181 n Table (Specimu 	ins) r
Annotation Table (Main) Annotation Table (Main) Dysaichtys Dysaichtys	Texon List	Quality duseri absent present increased size triangular restangular	Additional Entity	C = 0 ×	Annotation Collection MCZ	13-181	ens) e
Velasurement Unit Annotation Table (Main) Annotation Table (Main) I annotation Table (Main) I an	Taxon List	Quality auseriti absent present increased size triangular rectangular	Additional Entity	PBxi     ZFA:000     ZFA:	Annotation Collection MCZ	13-181 n Table (Specimu 	2005) e
Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Utility (Main) Ma	Taxon List	Quality down's absent absent increased size triangular rectangular triangular rectangular	Additional Entity	PBxi     ZFA:00     ZFA:00     ZFA:0	Annotation Annotation Collection MCZ	13-181	ens) e
Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Annotation Table (Main) Delionnystes chilensis Opsanichtys uncirostri Stemopryus macrutus Stemopryus macrutus	Taxon List	Quality ausen absent present sinangular rectangular retangular retangular uptrached	Additional Entity	V DBxt ZFA:000 ZFIN:77	efs (2) 0250 B-ANAT-0111 Annotation Collection MCZ	13-181 n Table (Specime a Specimen II 54388	nns) e
Annotation Table (Main) Annotation Table (Main) Diglomylas chilonas Stemocycystes chilonas Stemocycystes chilonas Stemocycystes chilonas	Taxon List	Quality absent present increased size triangular rectangular triangular necangular unbranched anterodorsal to	Additional Entity	C =      X	efs (2) 0250 B-ANAT-0111 Annotation Collection MGZ	13-181 n Table (Specime n Specimen IC 54388	) )
Annotation Table (Main) Annotation Table (Mai	Taxon List	Quality auseria absent present sinangular rectangular rectangular rectangular unbranched anterodorsal to donsal to	Additional Entity vertebra 1	PBxt     ZFA:000     ZFA:000     ZFA:000     ZFA:000     A	efs (2) 0250 PANAT-0111 Annotation Collection MGZ	13-181 n Table (Specimu 	2115) e
Annotation Table (Maio) Annotation Table (Maio) Annotation Table (Maio) Annotation Table (Maio) Annotation Table (Maio) Annotation Table (Maio) Annotation (Maio) Opsanichtys uncicosi Opsanichtys uncicosi	Taxon List Entry mous some kineftmiol bone creatbinnichi Some opercle opercle basipergium traphi	Quality stowning absent present increased size triangular rectangular metangular unbranched anterodorsal to dorsal to anterodorsal to	Additional Entity vertebra 1 vertebra 1	V DBxx     ZFA.00(0)     ZFN.01     C = 0 ×	efs (2) 0250 BANAT-0111 Annotation Collection MCZ	13-181 n Table (Specimum 	)

			A - 0	× Term Info:	dermal bone			++-0
Publication	Fink and Fink 1981			dermal bo	ne		«	14 4
Valid Name	Onsariichthys uncirostris				Parents			
				10	a boso			
Publication Name				13	_a <u>vviie</u>			
Taxon Comments					Children			
Entity	opercle			is	_a caudal pr suprapres	ocurrent ray, angu opercle, ectopteryc	loarticular, pa joid, preoperc	rasphenoid, le
0	and a second sec				anterodor	sal process, derm	opalatine, pre ateral shelf	opercle
Quality	recangular				lepidotric	hium, interopercle,	frontal bone.	parietal
Spatial Aspect					suboperc	le, entopterygoid,	kinethmoid bo	ne,
Additional Entity					supramax principal	ulla, maxilla ascen ray, supraorbital bi	ding process, one, maxilla a	caudal nterolateral
					flange, po	sttemporal, entopt	erygoid vertic	al strut,
Measurement					pasal hor	e coronomeckelia	in antorbital h	torizontal
Measurement				4	nasal bor flange, in	e, coronomeckelia fraorbital, postcleit	n, antorbital h hrum, branchi	ostegal ray,
Measurement Unit			)4 +	A T	nasal bor flange, in extrascap entoptery	te, coronomeckelia fraorbital, postcleit ular, infraorbital 5 gold dorsolateral p	an, antorbital F hrum, branchi flange, maxilla rrocess, antori	norizontal ostegal ray, a, bital,
Measurement Unit Annotation Table (Mai	)) Taxon List		)4 1		nasal bor fange, in extrascap entoptery	ie, <u>coronomeckelia</u> fraorbital, <u>postcleit</u> ular, infraorbital 5 gold dorsolateral p Table (Specimen _/h.	n, antorbital f hrum, branchi flange, maxilla irocess, antor s)	torizontal ostegal ray, a, bital, * _ D
Measurement Unit Annotation Table (Mai Annotation Table (Mai	n) Taxon List		)4 1	×	Annotation	ie, coronomeckelia fraorbital, postcleif ular, infraorbital 5 gold dorsolateral p Table (Specimen	in, antorbital f hrum, branchi flange, maxili irocess, antor s)	torizontal ostegal ray, a, bital,
Measurement Unit Annotation Table (Mai Annotation Table (Mai	n)		)4 1	*x	Annotation Collection	e, coronomeckelia fraorbital, postcleif ular, infraorbital 5 gold dorsolateral p Table (Specimen 	an, antorbital f hrum, branchi flange, maxili roccess, antor s)	torizontal ostegal ray, a, bital, * _ 0
Measurement Unit Annotation Table (Mai Annotation Table (Mai	1) Taxon List n) Entity	Quality	) ∢ ►	e - O x	Annotation Collection MCZ	e, coronomeckelia fraorbital, postcleif ular, infraorbital 5 gold dorsolateral p Table (Specimen Specimen ID 54388	in, antorbital f hrum, branchi flange, maxili recess, antor s)	sorizontal. ostogal ray. a. bital.
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai	n) Taxon List n) Ently, s Ently corre	Quality	Additional Entity	A - O X	Annotation Collection MCZ	In cornomeckelia fraorbital, postcleri ular, infraorbital 5 gold dorsolateral p Discrete for the second sec	n, antorbital f hrum, branchi frange, maxili rrocess, antor s)	sorizontal ostegal ray, a, bital,
Measurement Unit Annotation Table (Mai Annotation Table (Mai Contemportation Table (Mai Contemportation Contemportation Valid Name Sternoprojus macunt	1) Taxon List n) s Ently kinetimoj uoure kinetimoj done	Quality expert absent	Additional Entity	* - • ×	Annotation Collection MCZ	In the second se	in, antorbital f hrum, branchi flange, maxili flanges, antor rocess, antor s)	sorizontal ostegal ray, a, bital,
Measurement Unit Annotation Table (Mai Annotation Sale) (Mai Annot	n) Taxon List n) s Entry Antertimol Sone tris prethmold Sone	Ouality examin absent present	Additional Entity	r - O X Measure	Annotation Collection MCZ	e, coronomieckelia fraorbital, postcient and idan infraorbital 5 aoid dorsolateral s aoid dorsolateral s add	n, antorbilal f hrum, branchil flange, maxill rocess, antor s)	sorizontal ostegal ray, a, bital, * – D
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Charles (Mai Annotation Table (Mai Charles (Mai Annotation Table (Mai Charles		Quality experies absent present increased size	Additional Entity	r x Measure	Annotation Collection MCZ	e, coronneckeli Taorbita) posteri ular, infraorbital 5 aold dorsolateral I Table (Specimen La Specimen ID 54388	n, antorbilal f hrum, branchi flange, maxili roccess, antori s)	sorizontal ostegal ray. 2. bital. ≥ - □
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annot	Taxon List     n     Ently     Ently     Ently     Ently     Construction     Construction     Construction	Quality exemt absent present increased size triangular	Additional Entity	r - 0 x	Annotation Collection MCZ	e, coronomeckeli franchita), postcieri ular, infranchital 5 geid dorsolateral r Table (Specimen Specimen ID 54388	n, antorbila i hrum, branchi fange, maxill roccess, antori s)	sorizontal ostegal ray, a, bital, * - D
Measurement Unit Annotation Table (Mai Annotation Table (Mai annot		Ouality exert absent present increased size trangular rectangular	Additional Entity	A - O X	Annotation Collection MCZ	e, coronomieckeli franchital, postcleri ular, infranchital 5 opid dorsolatera ( pod	nn, antorbilat hrum, branch hrum, branch hrum, emaxilla roccess, antori s)	oorizontali ostegal ray, a, bital, c _ D
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annot	Taxon List     Toto Control Control     Service Control Control     Service Control Control     Service Contro     Service Control     Service Control     Servic	Quality ausent absent increased size triangular triangular	Additional Entity	* - 0 ×	Annotation Collection MCZ	e, coronneckeli franchita), postcief ular, infranchital 5 gold dorsolateral Table (Specimen Specimen ID 54388	n, antorbital f num, branchi flange, maxilli roccess, antor s)	sorizontal ostegal ray. a. bital,
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annot	Paraon List     P     Ently     Ently     Ently     Construct state     Knehmod base     corrabbranchal 8 bone     opercle     s     opercle     opercle	Quality award absent increased size triangular rectangular triangular rectangular	Additional Entity	× ×	Annotation Collection MCZ	e, coronomieckeli infanchital, postcleri ular, infanchital z pojd dorsolatera j pojd dorsolatera j pojd dorsolatera j di descolatera j specimen ID 54388	n, antobial I himu, branchi flange, maxili rocess, antor s)	sorizontal ostegal ray, a, bial trail c = 0
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annot	Taxon List     T	Quality examination present increased size triangular rectangular rectangular unbranched	Additional Entity	Measure	Annotation Collection MCZ	e, coronomieckeli Tarohital, poskcieri ular, infraorbiata j opid dorsolatara j opid dorsolatara j Di Table (Specimen Secimen ID 54386	n, antobial I himmonia Inimi, branchi flange, maxili flange, maxil	sorizontal ostegal ray, a, bital, * _ D
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annot	Y Taxon List     Provember 2015     Construction	Quality ausent absent increased size triangular rectangular unbranched anterdorsal to	Additional Entity	× × Measure	Annotation	e, coronomisckeli faorbital, poskleri ular, infraorbital a poid dorsolatiara j apid dorsolatiara j apid dorsolatiara j spid dorso	n, antopial i hrum, branchi flange, maxil flange, maxil flange, maxil s)	sorizontal ostegal ray, a, bital,
Measurement Unit Annotation Table (Mai Annotation Table (Mai Diplomystes chilensis Diplomystes chilensis Diplomystes chilensis Diplomystes chilensis	Sentymeurourow     Construction	Quality absent present increased size triangular rectangular rectangular unbranched anterodorsal to dorsal to	Additional Entity	Measure	Annotation Collection MCZ	e, coronomieckeli Tarohital, poskcieri ular, infraorbiatera j coli dorsolatera j coli dor	n, antobial f hum, branchi flange, maxili flange, maxili flange, antof s)	sorizontal ostegal ray, ∂. bital
Measurement Unit Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Annotation Table (Mai Opsariichtys uncires Opsariichtys uncires	Taxon List     Taxon List     Taxon List     Softwinner correr     Knowners correr     Knowners correr     Knowners correr     Knowners     Softwinners	Quality ausent present increased size triangular rectangular unbranched anterdorsal to anterdorsal to	Additional Entity vertebra 1 vertebra 1	Measure	Annotation	e, coronomieckali infontital, poskleti ular, infraoritital 5 poskleti dorsolateral ( Table (Specimern 54388	n, antopial f hrum, branchi flange, maxil flange, maxil destas, antopia s)	sorizontal ostegal ray, a, bital,







			840	× Term Info: inferred fr	om voucher specimen	20-10
Quality	anterodorsal to		Comp	inferred from vouche	er specimen	< > ≥
Spatial Aspect						
Additional Entity	vertehra 1		Comp	Term: inferre	ed from voucher specimen	
r and a circly				ID: ECO:0	0000050	
Measurement				Ontology: evider	nce code2.obo	
Unit			•	Definition Used v	when an annotation is made	on the basis of for
				a phen	otype description for a speci	es or higher level
Compare To				referen	nces an observation of a vou	ther specimen(s)
Evidence	inferred from voucher specimen		_ <b>_</b>	<ul> <li>Synonyms (1)</li> </ul>		
Specimen Evidence	inferred from visible phenotype			EXACT IVS		
opeenier Eridenee	inferred from voucher specimen			w Linke (1)		
Textual Description				+ Lanks (1)		
Character Number	68			Paren	ts	
Defense in a second				is_a inferrer	d from phenotype	
Reference image(s)				A Childr	ren.	
Noton				1 J		
Annotation Table (Main	) Taxon List					
Annotation Table (Mai	a)					e _ 1
4 - 4						1
🖕 📥 👍	Entity	Quality	Additional Entity	Eudonco	Spacimon Evidence	Moneuromor
Valid Name	Entity scaphium	Quality anterodorsal to	Additional Entity vertebra 1	Evidence inferred from voucher	"MCZ 8290"	Measuremen
Valid Name Diplomystes chilensis Opsarlichthys unciros	Entity scaphium ris scaphium	Quality anterodorsal to dorsal to	Additional Entity vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher	"MCZ 8290" "MCZ 32375"	Measuremen
Valid Name Diplomystes chilensis Opsarlichthys unciros Rhoadsla altipinna	Entity scaphium ris scaphium scaphium	Quality anterodorsal to dorsal to anterodorsal to	Additional Entity vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher	*MCZ 8290* *MCZ 32375* *MCZ 49955*	Measuremen
Valid Name Diplomystes chilensis Opsarlichthys unciros Rhoadsia altipinna Stemopygus macruru	Entity scaphium ris scaphium scaphium ; scaphium	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher inferred from voucher	Specimen Evidence "MGZ 8290" "MGZ 32375" "MGZ 49955" "CAS(IUM) 12591"	Measuremen
Valid Name Diplomystes chilensis Opsarlichthys unciros Rhoadsla altipinna Stemopygus macruru Xenocharax spilurus	Entity scaphium ris scaphium scaphium ; scaphium scaphium	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to anterodorsal to	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher inferred from voucher	Specimen Evidence "MCZ 8290" "MCZ 32375" "MCZ 49955" "CAS(IUM) 12591" "MCZ 48020"	Measuremen
Valid Name Diplomystes chilensis Opsariichthys uncloss Rhoadsla altipinna Stemopygus macruru Xenocharax spilurus Opsariichthys uncloss	Entity scaphium ris scaphium scaphium scaphium scaphium ris preethmoid bone	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to present	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher	Specimen Evidence "MCZ 8290" "MCZ 32375" "MCZ 49955" "CAS(IUM) 12591" "MCZ 48020" "MCZ 32375"	Measuremen
Valid Name Diplomystes chilensis Opsarlichtys unciros Rhoadsla altipinna Stemopygus macruru Xenocharax spilurus Opsarlichtys unciros Diplomystes chilensis	Entity scaphium scaphium scaphium scaphium fis preethmold bone basipterygium	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to anterodorsal to present bifurcated	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher	Specimen Evidence "MCZ 8290" "MCZ 32375" "MCZ 49955" "CAS(IUM) 12591" "MCZ 48020" "MCZ 32375" "MCZ 8290"	Measuremen
Valid Name Diplomystes chilensis Opsariichtys unciros Rhoadsia altpinna Stemopygus macruru Xenocharax spilurus Opsariichtys unciros Diplomystes chilensis Opsariichtys unciros	Entity scaphium scaphium scaphium scaphium scaphium ris preetimold bone basipterygium tis basipterygium	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to present bifurcated	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher inferred from voucher	Specimen Evidence "MCZ 8290" "MCZ 49955" "CAS(UM) 12591" "MCZ 48020" "MCZ 32375" "MCZ 8290" "MCZ 8290"	Measuremen
Valid Name Diplomystes chilensis Opsarlichthys unciros Stemopygus macuru Xenocharax spilurus Opsarlichthys unciros Diplomystes chilensis Opsarlichthys unciros Diplomystes chilensis	Entity scaphium ris scaphium scaphium scaphium ris preethmoid bone basipterygium basipterygium	Quality anterodorsal to dorsal to anterodorsal to anterodorsal to present bifurcated bifurcated bifurcated	Additional Entity vertebra 1 vertebra 1 vertebra 1 vertebra 1 vertebra 1	Evidence inferred from voucher inferred from voucher	Specimen Evidence "MC2 8290" "MC2 32375" "MC2 49955" "CAS(IUM) 12591" "MC2 48020" "MC2 48375" "MC2 8290" "MC2 33375" "MC2 33375"	Measuremen





		7.0X T	erm Info: dorsal fin		P ? _ 0
Publication Fink and Fink 1981		n n e	orsal fin		< > 20
Valid Name Vandellia	)	•	Basic Info		
Publication Name			Term: dorsal fi	n	
Taxon Comments		-	ID: TAO:000	1173	
	-		Ontology: teleost_a	anatomy	
Entity scale*part_of(dorsal fir	n)	Comp	Definition: (no defini	tion provided)	
Quality		Comp			
Spatial Aspect		•	Links (6)		
Additional Entity	A C Entity Post C	Comp	Parents		
Measurement	Genus scale	· · · · · · · · · · · · · · · · · · ·	develops		
Unit	Relationship net of		from dorsal fin	told	
Compare To	Relationship parcor		Children	skeleton, dorsal fin mus	sculature anical
	Differentia dorsal finj		ectoderm	al ridge dorsal fin, mese	anchyme dorsal fin
kundoneo.					
Annotation Table (Main) Taxon List	•	OK Cancel	Annotation	Table (Specimens)	4 - D
Annotation Table (Main) Taxon List	+	OK Cancel	Annotation	n Table (Specimens)	
Annotation Table (Main) Taxon List Annotation Table (Main)	•	OK Cancel		Table (Specimens)	*-0
Annotation Table (Main) Taxon List Annotation Table (Main)		OK Cancel	Annotation	1 Table (Specimens)	
Annotation Table (Main) Taxon List Annotation Table (Main)	Cuality A	OK Cancel	- D X Annotation	n Table (Specimens) Specimen ID 221203	
Annotation Table (Main) Taxon List Annotation Table (Main)  Taxon List Annotation Table (Main)  Valid Name Entity Chilogianis canosus Gonal fin Charas	Cuality Ar	OK Cancel	Annotation	Table (Specimens)	·
Valid Name Ently Childgianis carnous dorsal fin Delonges chilensis dorsal fin Delonges chilensis dorsal fin Delonges chilensis dorsal fin	Cuality A	OK Cancel	Annotation	Table (Specimens)     Specimen ID     221203	
Annotation Table (Main) Taxon List Annotation Table (Main)	Cuality Ad	OK Cancel	Annotation	Table (Specimens)  Specimen ID 221203	
Annotation Table (Main) Taxon List      Annotation Table (Main)     Wain Name     Wain Name     Wain Name     Wain Name     Consus     Con	Cuality A	OK Cancel	X Annotation	Table (Specimens)	
Accession Table (Marin) Taxon List     Arrostation Table (Marin)     Taxon List     Arrostation Table (Marin)     Taxon List     Arrostation Table (Marin)     Childgiant cambus     Aorastation     Aororastation     Aorastation     Aorastation     Aorastation     Ao	Cuality As	OK Cancel	Annotation	Table (Specimens)	r - 0
Anotocina Table (Marin) Toxin List      Anotocina Table (Marin)     Toxin List      Anotocina Table (Marin)     Toxin List      Anotocina Table (Marin)     Toxin List      Anotocina Table	Custry A	OK Gancel	Annotation	Table (Specimens)     Specimen ID     221203	

			Phenote+			
s 🖪						
Annotation Editor			*=0×	Term Info: inferred from gene expressi inferred from gene expression similari	on similarity 🛛 🖈 -	
Publication	Fink and Fink 1981			Term: inferred from gene expression similarity		
Entity	manubrium		Comp	ID: ECO:0000075		
Taxon	Siluriformes		•	Definition: Used when an annotation	i is made based on the similarity	
Homologous Entity	intercalarium		Comp	of expression of genes in	structures.	
Homologous Taxon	Osteichthves			<ul> <li>Synonyms (1)</li> </ul>		
Evidence	inferred from dene expressio	n similarity		EXACT IGES		
Endence	interieu ioni gene expressio	( January				
				Parents		
				is_a inferred from phenotypic r	similarity	
Annotation Table (Ma	in)				*-	
Publication Fink and Fink 1981	Entity	Taxon Siluriformes	Homologous Entity	Homologous Taxon	Evidence inferred from gene	
This did this toot	manaonam	Chantonico	inter constraint	oucleaninges	interiou noni gene	
Simple Filter	-				() Ex	

