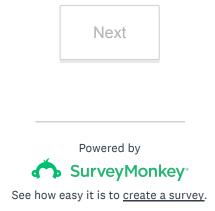
Character Annotation Assessment from Phenoscape (Chakrabarty 2007)

Welcome to the Phenoscape Character Annotation Survey

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1.	Character 52: Midbody spot
	State 0: present below upper lateral line

Drag and drop the following choices in order of preference, with your top choice in the first position.				
melanophore spot the upper lateral line	nat is in_median	_plane_of a multi-c	ellular organism,	ventral to, an
midbody spot that is	ventral_to a lat	eral line, present		
midbody melanopho	ore spot, ventral	to, an upper lateral	line	
melanophore spot, \	ventral to, an up	per lateral line		
midbody spot that is	part_of an uppe	er lateral line, prese	nt	
(Optional) Comments and feedba	Power	Next red by eyMonkey*	its annotation	s:

2.	Character 38: Gill rakers on ceratobranchial of	irst gill arch	(most rostral arcl	n) protrude
οv	er medial ridge of arch			

State 0: absent

	gill raker that is part_of a ceratobranchial 1 element and that is a bearer_of protruding, absent
	gill raker that is part_of a ceratobranchial 1 element, position not protrude over, a medial region that is part_of a pharyngeal arch 3
	gill raker that is part_of a ceratobranchial 1 element that is part_of a pharyngeal arch 3, position not protruding into, a medial region that is part_of a pharyngeal arch 3
	pharyngeal arch 3, position not protruding into, a medial region that is part_of an anatomical projection
	gill raker that is part_of a ceratobranchial 1 element, position that is not protruding, a medial region that is part_of a pharyngeal arch 3
Optional)	Comments and feedback about this character and its annotations:
	Prev Next
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3.	. Character 57: Cheek scales cover	ed in thick sk	kin i.e., skin i	s so thick that	scales cannot
be	e counted without removing the sk	in			

State 1: present

dermal scale that is de	ep_to skin of cheek, present	
zone of skin that is a b	earer_of increased thickness, present	
cheek scale, covered b	y, a zone of skin	
zone of skin that is dor	sal_to a scale, and that is part_of a cheek, increased thickn	ess
zone of skin that is adj	acent_to a cheek scale, increased thickness	
tional) Comments and feedback	about this character and its annotations:	
tional) Comments and feedback	about this character and its annotations: Prev Next	

4. Character 32: Tooth cusps on lower pharyngobranchial toothplate State 0: unicuspid (simple teeth)

Drag and drop the following choices in order of preference, with your top choice in the first position.				
cusp of tooth that i	is part_of a pharyngobranchial tooth plate that is part_of a skeleton of			
lower jaw, unicusp	vid			
calcareous tooth th	hat attaches_to a lower pharyngobranchial toothplate, unicuspidate			
cusp of tooth that i	is part_of a pharyngobranchial tooth plate, unicuspid			
cusp of tooth that i	is part_of a lower pharyngobranchial toothplate, unicuspid			
calcareous tooth th	hat attaches_to a lower pharyngobranchial toothplate, conical			
(Optional) Comments and feedb	Prev Next			
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5. Character 72: Mouth length, including maxillary shank
State 1: not reaching vertical through rostral margin of orbit

Drag and opposition.	Orag and drop the following choices in order of preference, with your top choice in the first position.			
	mouth, separated from, an anterior region that is part_of an orbital cavity			
	mouth that has_part maxillary shank, decreased length; mouth, position that does no extends to, an anterior margin that is part_of an orbit	t		
	mouth that has_part maxillary shank, position that does not extends to, an anterior margin that is part_of an orbit; mouth, decreased length			
	mouth, separated from, an anterior region that is part_of an orbit			
	mouth that is a bearer_of present, contact, a vertical myoseptum			
(Optional)	Comments and feedback about this character and its annotations: Prev Next			
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6. Character 1: Symphysial-extension of alveolar-process of premaxilla State 1: absent

Drag and drop the following position.	choices in order of	of preference, with your top choice in the
anatomical pro	ojection that is part_of	a premaxilla dentigerous process, absent
premaxilla der	ntigerous process, <mark>size</mark>	that is not increased size
premaxilla der	ntigerous process, decr	reased size
premaxilla der	ntigerous process, cour	nt that is not present
	ojection that is part_of a	an upper jaw symphyseal region that is part_of
(Optional) Comments and fe	edback about this	character and its annotations:
· · ·		
	Prev	Next
	Powere	
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7. Character 85: Sensory pores directly posterior to the orbit

State 0: form continuous clump of pores from orbit to opening of operculum

sition.		
sensory pore that	t is posterior_to ar	orbital region, continuous (structure)
sensory pore that	t extends_from an	orbit, and that extends_to a gill opening
sensory canal po	re series that is po	sterior_to an orbit, high spatial distribution
sensory pore that	t is posterior_to ar	orbital region, continuous with, a gill opening
sensory pore that	t is posterior_to ar	orbit, variant
tional) Comments and feed	back about thi	s character and its annotations:
ional) Comments and feed	lback about thi	s character and its annotations:
tional) Comments and feed	Prev	Next
tional) Comments and feed		
ptional) Comments and feed	Prev	

8.	Character 7: Retroarticular and process of anguloarticular on same vertical plar	1e
	State 0: No	

Drag and drop the following choices in order of preference, with your top choice in the first position.			
	ticular process, misaligned with, an anatomical projection that is part_of ular/anguloarticular		
retroar	ticular that is part_of a articular/anguloarticular, count that is not present		
	ticular, position that is not aligned with, an anatomical projection that is part_of a ar/anguloarticular		
	ticular, position that is not aligned vertically with, an anatomical projection that is f a articular/anguloarticular		
retroar	ticular, position that is not level with, an articular/anguloarticular		
(Optional) Comments	and feedback about this character and its annotations: Prev Next		
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9. Character 55: Caudal spot expansion
State 1: caudal spot continues across caudal-peduncle as part of a horizontal band

	melanophore spot	that is a part_of	a caudal fin, present; melanophore spot that
multi-cellular organism that is a bearer_of a melanophore spot, extends to, a caudal peduncle caudal melanophore spot, extends to, a caudal peduncle melanophore spot that is a part_of a caudal fin, and that is a part_of a caudal pedu present; melanophore spot that is part of a caudal fin, and that is part of a caudal peduncle, present al) Comments and feedback about this character and its annotations:	part_of a caudal p	eduncle, present	:
caudal melanophore spot, extends to, a caudal peduncle melanophore spot that is a part_of a caudal fin, and that is a part_of a caudal pedu present; melanophore spot that is part of a caudal fin, and that is part of a caudal peduncle, present al) Comments and feedback about this character and its annotations:	caudal spot, prese	ent; caudal pedu	ncle, present
caudal melanophore spot, extends to, a caudal peduncle melanophore spot that is a part_of a caudal fin, and that is a part_of a caudal pedu present; melanophore spot that is part of a caudal fin, and that is part of a caudal peduncle, present al) Comments and feedback about this character and its annotations:	multi-cellular orga	nism that is a bea	arer_of a melanophore spot, extends to, a cau
melanophore spot that is a part_of a caudal fin, and that is a part_of a caudal pedu present; melanophore spot that is part of a caudal fin, and that is part of a caudal peduncle, present al) Comments and feedback about this character and its annotations:	peduncle		
present; melanophore spot that is part of a caudal fin, and that is part of a caudal peduncle, present al) Comments and feedback about this character and its annotations:	caudal melanopho	ore spot, extends	to, a caudal peduncle
al) Comments and feedback about this character and its annotations:	melanophore spot	that is a part_of	a caudal fin, and that is a part_of a caudal peo
al) Comments and feedback about this character and its annotations:	present; melanop	hore spot that is	part of a caudal fin, and that is part of a cauda
	peduncle, present	:	
	al) Comments and feed	back about thi	is character and its annotations:
	nl) Comments and feed		

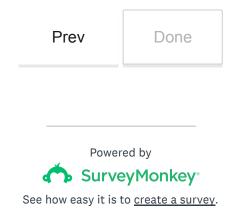
10. Character 60: Chest scales State 1: without thick skin

(
	skin of body that is dorsal_to a scale, and that attaches_to a chest, decreased depth
	skin of body that is dorsal_to a scale, and that is part_of a chest, shape that is not increased thickness
	scale that attaches_to an antero-ventral region that is part_of a multi-cellular organism, position that is not covered by, a zone of skin
	scale that attaches_to an antero-ventral region that is a part_of a multicellular organism, position that is not overlapped by, a zone of skin that is a bearer_of increased thickness
	zone of skin that is a bearer_of increased thickness, present
ptional)	Comments and feedback about this character and its annotations:
	Prev Next

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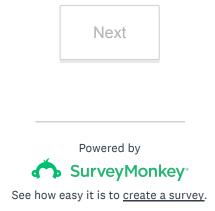


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1. Character 82: Broad suborbital shelf

	suborbital shelf, shape that is not increased width
	suborbital shelf that is a bearer_of broad, absent
	anatomical projection that is a bearer_of increased width, absent
	suborbital bone that has_part anatomical projection and that is bearer_of broad, absent
	suborbital shelf, shape that is not broad
ional)	Comments and feedback about this character and its annotations:
ional)	Comments and feedback about this character and its annotations: Prev Next
tional)	

2. C	haracter 30: Dib	asal pectoral-fin	endoskeleton
S	State 0: absent		

endoskeleton that is a part_of a pectoral fin, absent pectoral fin skeleton, structure basal side that is a part_of a pectoral fin skeleton, undivided pectoral fin skeleton, shape that is not dibasal Comments and feedback about this character and its annotations:	propterygium, abo	sent; metapterygio	m, absent
basal side that is a part_of a pectoral fin skeleton, undivided pectoral fin skeleton, shape that is not dibasal Comments and feedback about this character and its annotations:	endoskeleton tha	t is a part_of a pec	roral fin, absent
pectoral fin skeleton, shape that is not dibasal Comments and feedback about this character and its annotations:	pectoral fin skelet	on, structure	
Comments and feedback about this character and its annotations:	basal side that is	a part_of a pectora	I fin skeleton, undivided
	pectoral fin skelet	on, shape that is r	ot <mark>dibasal</mark>
	Comments and food	back about this	character and its annotations:
	Comments and feed		Next

3.	. Character 39: Pelvic plate semicircular w	ith	anterolateral	concavity
	State 1: present			

position.		_
	pelvic plate that is a bearer_of semicircular, present; bone fossa that is a part_of a pelvic plate, present	
	pelvic plate, semicircular; antero-lateral region that is a part_of a pelvic plate, concave	_
	pelvic plate, semicircular; bone fossa that is a part_of an antero-lateral region that is a part_of a pelvic plate, present	
	pelvic plate, semicircular	
	basipterygium element, semicircular; antero-lateral region that is a part_of a basipterygium element, concave	n
(Optional) Co	mments and feedback about this character and its annotations:	
	Prev Next	
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4.	Character 51: Palatoquadrate otic process expanded with an anterodorsal ang	jle
	State 1: present	

Drag and drop the following choposition.	pices in order of preference, with your top choice in the fir	st
otic process that is angle, present	a bearer_of increased size, present; otic process that is a bearer_of	
otic process, increa	ased size; otic process, anterodorsal angle	
otic process, increa	ased size; otic process, anterodorsal orientation	
otic process, increa a palatoquadrate c	ased size, an antero-dorsal region; anatomical entity that is a part_of artilage, distended	
otic process that is	a part_of a palatoquadrate cartilage, increased size	
(Optional) Comments and feedb	Prev Next	
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5. Character 74: Endolymphatic ducts exit into slot-shaped median fossa State 1: present

osition.	endolymphatic d	uct that extends_t	a bone fossa that is a bearer_of slot-shap	ed, present
	andolymphatic d	uet protruding out	of, a bone fossa that is a bearer_of slit-like	
	endolymphatic d	uct, protituding out	or, a bone lossa that is a bearer_or sin-like	
	endolymphatic d	uct, exit into, a bo	e fossa that is a bearer_of slot-shaped	
	bone fossa that i	s adjacent_to a er	dolymphatic duct, slot-shaped	
	median region th	nat is a part_of a b	ne fossa and bearer_of slot-shaped, prese	ent
optional) (Comments and feed	dback about th	s character and its annotations:	
optional) (Comments and feed	dback about th	s character and its annotations:	
ptional)	Comments and feed			

6. Character 18: Anal fin with double base-plate State 1: present

anal fin basal cartilag	, bipartite	
anal fin radial, count,		
anal fin base plate, st	ucture	
double base-plate that	is a part_of an anal fin, present	
anal fin, present		
Comments and feedbac	Prev Next	inotations:

7. Character State 1: p		e foramen exits	s dorsally, posterior to otic capsule
Drag and dro	op the following choices in o	rder of prefere	ence, with your top choice in the first
	glossopharyngeal nerve foran	nen, posterior to,	an otic capsule
	foramen for glossopharyngeal	I nerve, posterior	to, an otic capsule
		conduit that encl	yngeal nerve and is posterior_to an otic oses a glossopharyngeal nerve and is
	foramen for glossopharyngea	I nerve that is pos	sterior_to an otic capsule, present
	foramen for glossopharyngeal an otic capsule	I nerve, exits thro	ugh, a dorsal region that is posterior_to
(Optional) C	omments and feedback abou		
		Powered by	

В.	Character 3: Lateral	line	passes	through	scales
	State 1: present				

Drag and drop the following position.	choices in order	of preference, w	ith your top choice	in the first
scale that encl	loses a lateral line, pr	esent		
lateral line, pa	sses through, a scale			
lateral line tha	t passes_through a s	cale, present		
lateral line that	t is a part_of a scale,	present		
lateral line, sui	rrounded by, a scale			
(Optional) Comments and fe	edback about this	s character and	ts annotations:	
	Prev	Next		
	✓	red by eyMonkey°		
	See how easy it is	to <u>create a survey</u> .		

9. Character State 0: a	r 47: Claspers with ' bsent	toothed' plate	•		
Drag and dr	op the following ch	oices in order	of preference	e, with your top ch	noice in the first
	clasper, structure	that is not dentat	ed		
	clasper, structure				
	clasper plate, abse	ent			
	clasper that is a be	earer_of dentate	d, absent		
	clasper, count that	t is not present			
(Optional) C	Comments and feed	Prev	Next	nd its annotations	5 :
		√	ered by		

10. Character 17: Anal fin supported by radials external to body wall State 0: absent

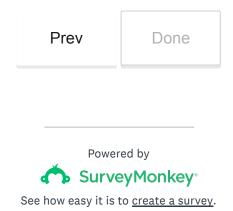
Drag and drop the following choices in order of preference, with your top choice in the first position.

position.		
anal fin radial, positi	ion that is not ex	external to, a body wall
anal fin, count that is	s not present	
anal fin radial that ex	xtends_to a fin,	, absent
anal fin radial skelet	ton, position that	at is not external to, a body wall
radial that is distal_t	to a body wall, s	separated from, an anal fin
	Prev	Next
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Character Annotation Assessment from Phenoscape (Coates and Sequeira 2001)

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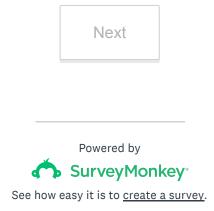
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State 0: p	oresent
Drag and d position.	rop the following choices in order of preference, with your top choice in the firs
	rib that is connected_to a sacrum, in contact with, an ilium
	sacral vertebra that is connected_to an ilium, present
	sacral vertebra, attached to, an ilium
	functional sacral vertebrae, present
	sacral vertebra, functional
(Optional) (Comments and feedback about this character and its annotations: Prev Next

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2	2. Character 307: Osteoderms,	ventral	surface	of the	body	(E126)
	State 0: absent					

Drag and drop the follo position.	wing choices in order of preference, with your top choice in the firs
bony pla absent	ate that is a part_of a ventral region that is a part_of a multi-cellular organism,
scute that	at attaches_to a ventral region that is part_of a multicellular organism, absent
bony pla	ate that is part_of a ventral surface that is part_of a multi-cellular organism, absent
ventral s	surface that is a part_of a multi-cellular organism, count that is not present
scute that	at attaches_to a ventral surface that is a part_of a multi-cellular organism, absent
(Optional) Comments a	Prev Next Powered by SurveyMonkey®

3. Character 131: Braincase, occipital condyle (Egek9)
State 2: single unit made of basioccipital and exoccipitals; U-shaped

Drag and drop the f position.	following choices in c	order of prefe	rence, with your to	p choice in the firs
	cipital condyle, amalgam o	•		e, amalgam of, a
a pa	sipital condyle that is a par art_of a neurocranium, sin	_		•
	sipital condyle, unipartite; xoccipital o		•	
	sioccipital bone that is a pat_of a occipital condyle, pr	_	•	ccipital bone that is a
	sipital condyle, undivided; xoccipital bone; occipital o	•	•	
(Optional) Commen	nts and feedback abou	ut this charac	eter and its annotati	ions:
	Prev	v Ne:	xt	

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4. Character 114: Palatine, secondary palate formed around choanal groove (E43) State 3: contact at midline

Drag and dr position.	op the following choices in order of preference, with your top choice in the firs
	secondary palate that is adjacent_to a midline of skull, in contact with, a choanal groove that is adjacent_to a midline of skull
	secondary palate, present; secondary palatal shelf that is in_left_side_of a multi-cellular organism, in contact with, a secondary palatal shelf that is in_right_side_of a multi-cellular organism
	secondary palate that is in_left_side_of a multicellular organism, in contact with, a secondary palate that is in_right_side_of a multicellular organism
	palatine bone, in contact with, a midline column; secondary palate that is a bearer_of formed, in contact with, a midline plane
	secondary palate, in contact with, a secondary palate
(Optional) C	omments and feedback about this character and its annotations: Prev Next
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5.	. Character	146:	Basisphenoid,	relationship	with the	posterior	opening	of the	Vidian	canal
(E	E53)									

	· -	al, located in, a prootic bone; anatomical hat is not located in, a basisphenoid bone
basisphenoid	bone that is a bearer_of present, p	resent
anatomical co	onduit that is a part_of a vidian cana	al, located in, a prootic bone
posterior regi	on that is a part_of a vidian canal th	nat is a part_of a prootic bone, present
posterior regi	on that is a part_of a vidian canal, e	extends to, a prootic bone
(Optional) Comments and f	eedback about this character	and its annotations:

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6. Character 249: Caudal vertebrae, dorsoventral height (including the neural spines and chevrons) (Bm-oid9)

State 1: greater than 3 times length of centrum

	caudal vertebra, decreased height	
	caudal vertebra, increased height, vertebral column	
	caudal vertebra, height that is increased_in_magnitude_relative_to a length the a caudal vertebra	at inheres_ir
	dorsoventral region that is a part_of a caudal vertebra, decreased height	
	caudal vertebra that has_part spinous process of vertebra and that has_part a arch, height that is increased_in_magnitude_relative_to a length that inheres i column	
(Optional)) Comments and feedback about this character and its annotations:	
	Prev Next	

7. Character 298: Squamation, cephalic scales (E147/Meszo70)
State 2: enlarged plates

Drag and droposition.	p the following choices in order of preference, with your top choice in the first
	cephalic dermal scale, increased size; cephalic dermal scale, platelike
	scale that attaches_to a head, increased size; scale that attaches_to a head, platelike
	cephalic scale, increased size
	dermal scale that attaches_to a head, increased size; dermal scale that attaches_to a head, platelike
	cephalic scale that is a bearer_of platelike and cephalic scale that is a bearer_of increased size, present
(Optional) Co	mments and feedback about this character and its annotations:
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8. Character 265: Scapula, size relative to the coracoid ()
State 0: subequal to, or larger than

scanula increa	ased size, coracoid bone; scapula, equal length, coracoid bon
Scapula, Incica	asca size, coracola borie, scapala, equal length, coracola bori
scapula, increa	ased size, coracoid bone; scapula, subequal size to, coracoid
pectoral fin sca	apula, size
scapula, increa	ased size, coracoid bone; scapula, size that is
similar_in_mag	nitude_relative_to a coracoid bone
al) Comments and fee	edback about this character and its annotations:
al) Comments and fee	edback about this character and its annotations:
al) Comments and fee	edback about this character and its annotations: Prev Next
al) Comments and fee	
) Comments and fee	

9. Character 80: Parietal, supratemporal processes length from the level of the parietal notch compared to the parietal anterior to that point (G30)

State 0: greater than 1/2

	supratemporal process,	increased I	ength	
	supratemporal process, parietal bone	decreased	length, an ante	erior region that is part_of a tetrapod
		-		tal notch, increased length, an all bone and that is anterior_to a parietal
	supratemporal process,	decreased	length	
	supratemporal process, parietal bone and anterio		_	rior region that is part_of a tetrapod
ptional) Comments and feedback	about thi	s character	and its annotations:
		Powe	ered by	

10. Character 221: Dentition, replacement (E85) State 1: posterolingually, resorption pit

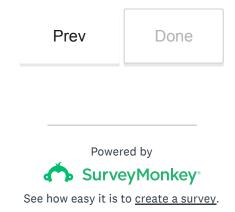
Drag and drop the following choices in order of preference, with your top choice in the first position.

resorption pit, present a jaw skeleton	; tooth repla	cement, position, posterolingual region that is a part_of					
replacement tooth, por resorption pit, present		ted; replacement tooth, lingual orientation;					
resorption pit, present a part_of a jaw region	_	nesis that occurs_in a posterolingual region that is					
dentition, present; end	dentition, present; endoskeleton replacement, present						
resorption pit, decrease	resorption pit, decreased size; replacement tooth, posterolingual						
(Optional) Comments and feedbac	k about thi	is character and its annotations:					
	Prev	Next					
Se	Surv	vered by veyMonkey° s to create a survey.					

Character Annotation Assessment from Phenoscape (Conrad 2008)

Thank you!

Thank you very much for your help! It will be acknowledged in the manuscript.



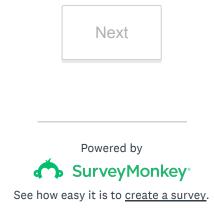
Character Annotation Assessment from Phenoscape (Hill 2005)

Welcome to the Phenoscape Character Annotation Survey

We recently conducted an experiment involving systematic characters, where we compared the performance of a Natural Language Processing (NLP) system relative to the markup by humans. Characters from one of your publications (Hill, 2005) were randomly chosen for inclusion in this dataset. We are using a variety of metrics to assess the quality of machine vs. human curation, but your feedback as the author of the characters will provide insight into how well the meaning of each is represented in the annotations.

We use an ontology-based representation to annotate systematic characters, in which ontology terms for anatomical structures such as eye or vertebra are combined with quality terms representing a trait or property that a structure possesses, such as round or silver. Thus a character state that you may have described as "eyes, round" would be annotated as 'eye, round'. Sometimes multiple structures are related to each other; for example, 'parietal, fused with a supraoccipital'. Finally, terms can be combined to create more specific terms (post-composition). For example, the presence of a projection on the parietal bone is represented as: 'projection that is part_of a parietal, present'. (Background information - not essential for completing the survey - on the syntax and standards used for character annotation can be found on the Phenoscape wiki, and ontology terms can be searched on Ontobee).

In this survey you'll be presented with ten characters randomly chosen from your publication, and a set of 5 annotations for each character. Please rank the annotations in order of preference, with your top choice, i.e., the annotation that best represents the meaning of the character state, in the first position.



1. Character 322: Pitting on dorsal osteoderms
State 3: mixture of subspherical and elongate pits

position.	op the following cho	ices in order	or preference	e, with your top choice in the first
	bony plate that is a	part_of dorsal s	surface, pitted; p	oit, subspherical; pit, elongated
	dorsal osteoderm th	nat is a bearer_	of pitted, surface	e feature shape
	scute that is a beard ornamentation, elor	_	ation, subspheri	cal; scute that is a bearer_of
	dorsal osteoderm, page a bearer_of elongate		t is a bearer_of s	subspherical, present; pit that is
	dorsal osteoderm, f	•		orsal osteoderm, subspherical; pit that
(Optional) C	Comments and feedba	ack about th	is character a	and its annotations:
		x	Next ered by	

2	2. Character 343: Peaked caudal keel ((heightened relative to dorsal ke	eels)
	State 1: present		

Drag and drop the following choic position.	ces in order of preference, with your top choice in the first
keel that is a part_of vertebra	f a caudal vertebra, increased height, a keel that is a part_of a thoracic
	f a posterior region that is a part_of a scute, increased height, a keel orsal region that is a part_of a scute
caudal keel, increase	ed size, a dorsal keel
caudal keel, present	
caudal keel, increase	ed height, a dorsal keel
(Optional) Comments and feedba	nck about this character and its annotations:
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3. Character 85: Posterior extension of orbit
State 1: present - orbit has elongated oval shape

Drag and drop the follow position.	ng choices in order of preference, with your top choice in the	first
orbit, ellipt	;	
orbital reg	n, ovate	
orbit, ovate		
extension	nat is a part_of a posterior region and a part_of an orbit, present	
orbital cav	y, ovate	
(Optional) Comments and	feedback about this character and its annotations:	
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4. Character 30: Origin of subclavian arteries

State 2: subclavian arteries originate anterior to separation of internal and external carotids

Drag and drop the following operation.	choices in order of preference, with your top choice in the firs
subclavian arte	ery, anterior to, a carotid
subclavian arte anterior_to exte	ery, originate from, an anatomical region and anterior_to internal carotid and ernal carotid
subclavian arte carotid artery	ery, position, an internal carotid artery; subclavian artery, position, external
subclavian arte	ery, present; external carotid, present
subclavian arte	ery, anterior to, a point of separation of internal and external carotids
(Optional) Comments and fee	edback about this character and its annotations: Prev Next
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5. Character 314: Central figure and surrounding segments on dorsal osteoderms State 1: present

order of preference, with your top choice in the first
of a dorsal osteoderm, present; organismal segment that is m, present
namentation, present
ent; organ segment that is a part_of a scute, present
a dorsal surface and that is a part_of a multi-cellular organism,
an organismal segment; central figure, surrounding, a dorsal
ev Next Powered by
1

6. Character 190: Retroarticular process State 1: transversely broad, dorsally concave

Drag and drop the following choices in order of preference, with your top choice in the first position. dorsal region that is a part of a retroarticular process, concave; retroarticular process, transversely broad retroarticular process, increased width; retroarticular process, concave dorsal region that is a part_of a retroarticular process, concave; retroarticular process, broad retroarticular process, broad; retroarticular process, concave retroarticular process, decreased width; retroarticular process, concave (Optional) Comments and feedback about this character and its annotations: Prev Next Powered by

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7. Character 204: Anterior part of dentary

	calcareous tooth, present; anterior side that is a part_of a dentary, present
	anterior region that is a part_of a dentary, dentated
	calcareous tooth that attaches_to an anterior region that is a part_of a dentary, present
	dentition that attaches_to an anterior region that is part_of a dentary, present
	calcareous tooth that is a part_of an anterior region that is a part_of a dentary, present
Optional)	Comments and feedback about this character and its annotations:

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8. Character 215: Cervical ribs

State 0: straight and extending posterolaterally, without anterior process

Drag and drop the following choice position.	s in order	of preference	e, with your top choice in the first
body of rib, parallel to,	a vertebral	centrum; cervic	cal rib, plowshare-shaped
cervical rib, plowshare- vertebral centrum	shaped; bo	ody of rib that is	a part_of a cervical rib, parallel to, a
rib that is a part_of a ce a cervical vertebra	ervical verte	bra, parallel to,	a vertebral centrum that is a part_of
cervical rib, crescent-sl	naped; cerv	vical rib that has	_part a diaphysis, parallel to, a vertebral
anatomical projection the cervical rib, straight;	•	_	region part_of a cervical rib, absent;
(Optional) Comments and feedback	about th	is character a	and its annotations:
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9. Character 124: Interpterygoid vacuity length State 2: long; at least 15% of skull length

interpterygoid vac	cuity, increased length,	a skull
interpterygoid vac	cuity, increased length;	interpterygoid vacuity, decreased leng
interpterygoid vac	cuity, increased length;	interpterygoid vacuity, length, a skull
interpterygoid vac	cuity, increased size	
interpterygoid vac	cuity, increased length	
l) Comments and feed	back about this ch	aracter and its annotations:
l) Comments and feed	back about this ch	aracter and its annotations:
l) Comments and feed		

10. Character 248: Supinator process

State 0: large, strongly angled relative to shaft, separated from it by groove

	supinator process, increased size; groove that is adjacent_to a humerus diaphysis and that is adjacent_to a supinator process, present; supinator process, strongly angled
	relative to, a humerus diaphasis
	supinator process, increased size; surface groove that is adjacent_to a humerus diaphysis and that is adjacent_to a supinator process, present; supinator process, angle, a humerus diaphasis
	supinator process, increased size; supinator process, separated from, a humerus diaphasis; supinator process, acute angle, a humerus diaphasis
	supinator process, increased size; supinator process in_left_side_of a multicellular organism, angle, a supinator process in_right_side_of a multicellular organism; supinator process, present
	supinator process, increased size; supinator process, separated from, a humerus diaphasis; supinator process, increased angle, a humerus diaphasis
Optional) (Comments and feedback about this character and its annotations:

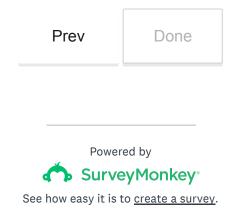
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Character Annotation Assessment from Phenoscape (Hill 2005)

Thank you!

Thank you very much for your help! It will be acknowledged in the manuscript.



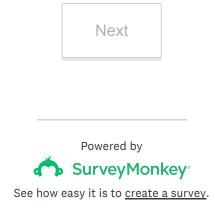
Character Annotation Assessment from Phenoscape (Nesbitt et al. 2011)

Welcome to the Phenoscape Character Annotation Survey

We recently conducted an experiment involving systematic characters, where we compared the performance of a Natural Language Processing (NLP) system relative to the markup by humans. Characters from one of your publications (Nesbitt et al. 2011) were randomly chosen for inclusion in this dataset. We are using a variety of metrics to assess the quality of machine vs. human curation, but your feedback as the author of the characters will provide insight into how well the meaning of each is represented in the annotations.

We use an ontology-based representation to annotate systematic characters, in which ontology terms for anatomical structures such as eye or vertebra are combined with quality terms representing a trait or property that a structure possesses, such as round or silver. Thus a character state that you may have described as "eyes, round" would be annotated as 'eye, round'. Sometimes multiple structures are related to each other; for example, 'parietal, fused with a supraoccipital'. Finally, terms can be combined to create more specific terms (post-composition). For example, the presence of a projection on the parietal bone is represented as: 'projection that is part_of a parietal, present'. (Background information - not essential for completing the survey - on the syntax and standards used for character annotation can be found on the Phenoscape wiki, and ontology terms can be searched on Ontobee).

In this survey you'll be presented with ten characters randomly chosen from your publication, and a set of 5 annotations for each character. Please rank the annotations in order of preference, with your top choice, i.e., the annotation that best represents the meaning of the character state, in the first position.



 Character 28: Quadrate, proximal portion, lateral condyle separated from the media
condyle by a deep but narrow furrow
State 1: yes

	I condyle of qua	adrata position			
latera		adrate, position	, a medial cond	lyle of quadrate	
	I lumbar region		at is a part_of a	a condyle, separated from, a	ulnar
separ	•	_		proximal region part_of a qua	
bone,	•	n, a condyle tha	• -	proximal region part_of a qua medial margin part_of a pro	
I) Comments	and feedba	ck about this	s character a	nd its annotations:	
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2. Character 54: Sternum, spina externa forming a ridge that extends dorsoventrally ov	er
entire sternum rostrum:	
State 0: no	

	spina externa, position that is not dorsoventrally extends over, a sternum rostrum
	spina externa, shape that is not ridged; spina externa, position that is not overlapping, manubrium of sternum
	sternum rostrum that is a bearer_of entire, absent
	spina externa, orientation that is not dorsally rotated; spina externa, orientation that is not ventrally rotated
	spina externa, separated from, an anterior margin that is a part_of a sternum
onal) Ce	omments and feedback about this character and its annotations: Prev Next

3. Character 5: Rostrum, dense neurovascular pitting State 1: present

sition.	·		
beak that is a be	arer_of pitted, pres	sent	
neurovascular pi	tting that is a bear	er_of dense, present	
beak, foveate			
neurovascular pi	tting that is a part_	of a beak, present	
neurovascular pi	tting, present		
otional) Comments and feed	lback about thi	s character and its annotations:	
otional) Comments and feed	lback about thi	s character and its annotations:	
otional) Comments and feed	lback about thi	s character and its annotations:	
otional) Comments and feed			

4. Character 58: Humerus, proximal end, posterior prominence of ventral tubercle distinctly
greater than that of head of the humerus

State 0: no

posterior side, size th	nat is not <mark>decr</mark>	eased size, a proximal epip	nysis of humerus
posterior prominence	e of ventral tul	ercle of humerus, decrease	d size, a proximal head o
ventral tubercle of hu	ımerus, size t	at is not decreased size, a	proximal head of humeru
greater tubercle of hu	umerus, decre	ased size, a proximal epiph	ysis of humerus
	. –	ventral region part_of a tube is decreased_in_magnitud	
al) Comments and feedba	ck about th	s character and its and	notations:

Drag and drop position.	the following choices in order of preference, with your top choice in the first
	anatomical projection that extends_from a transverse process of neural arch 3 and
	that extends_to an inferior articular process of vertebra that is part_of a mammalian cervical vertebra 3, absent
	plastron-carapice bridge that is a bearer_of osseous, absent
	transverse process of vertebra that is connected_to an inferior articular process of vertebra that is part_of a cervical vertebra 3, absent
	bony projection that extends_from transverse process of cervical vertebra that is part_of mammalian cervical vertebra 3, extends_to a postzygapophysis of cervical vertebra that is part_of mammalian cervical vertebra 3, absent
	transverse process of vertebra that is a part_of a cervical vertebra 3, separated from, an inferior articular process of vertebra that is part_of a cervical vertebra 3
(Optional) Con	nments and feedback about this character and its annotations:

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6. Character 14: Palatine, stron 2002: fig. 3): State 1: present	ngly protruding	posterolatera	ally directed processes (Mayr	
Drag and drop the following ch position.	noices in order	of preference	e, with your top choice in the fi	rst
anatomical project orientation, prese		of a palatine bo	ne and bearer_of posterolateral	
	de_of a multicellul		organism, protruding into, palatine boo atomical projection that is a bearer_c	
	ction that is a part_ _of protruding, pre	-	eral region part_of a palatine	
palatine bone that orientation, prese		nical projection th	nat is bearer_of posterolateral	
anatomical project	ction that is part_o	f a palatine bone	, posteriorly rotated	
(Optional) Comments and feed	back about this	s character at	nd its annotations:	
	√	ered by		

7. Character 11: Ectethmoid	
State 0: no anterior or lateral expa	ansion

Drag and d position.	rop the following choi	ces in order	of preference	e, with your top o	choice in the first
	ectethmoid, size tha	t is not increase	ed size		
	anatomical projectio	n that is a part_	_of ectethmoid,	absent	
	anterior region that is ectethmoid, decreas	· -	ethmoid, decrea	ased size; lateral reg	ion that is a part_of
	anterior region that is that is a part_of ecte			at is not increased sized size	ze; lateral region
	anterior side that is to is bearer_of absent,		nt, present; lat	eral lumbar region of	abdomen that
(Optional)	Comments and feedba	ck about thi	s character a	and its annotation	is:
		√	ered by		

8. Character 82: Tibiotarsus, distal end, supratendinal bridge State 1: tendinous

Drag and drop the following oposition.	choices in order of preference, with your top choice in the first
supratendinal b	oridge that is adjacent_to a tibiotarsus endochondral element, absent
supratendinal b is not ossified	oridge that is a part_of a distal region part_of a tibiotarsus, consistency that
supratendinal b	oridge that is a part_of a tibiotarsus, tendinous
supratendinal b	oridge, tendinous
distal region that a tibiotarsus, te	at is a part_of a tibiotarsus, tendinous; supratendinal bridge that is a part_of
(Optional) Comments and fee	edback about this character and its annotations:
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	6: Maxilla, posterior to tends laterally and po		the contact	jugal bar (=angulus tomialis)	
Drag and dro	op the following choic	es in order	of preference	e, with your top choice in the fi	rst
	maxilla, in contact with	n, a jugal bar			
	posterior margin that i	s a part_of a ı	maxilla, extends	s beyond, a jugal bar	
	posterior region that is	s a part_of a n	naxilla, in conta	ct with, a jugal bar	
	posterior margin that i	· -	·	/ rotated; posterior margin that is	
		_side_of a mu	lticellular organ	ism, extends from, a posterior region organism	
(Optional) Co	omments and feedbac	k about this	s character a	and its annotations:	
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10. Character 37: Mandible, proximal end small, with stout medial process and medial cotyla forming a narrow sulcus

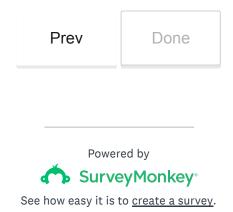
State 0: no

	sulcus that is a part_of a mandible, absent; proximal region that is a part_of a mandible, increased size
	proximal region that is a part_of a mandible, increased size; anatomical projection that is a part_of a medial region that is a part_of a mandible, absent; proximal region that is a part_of a mandible, increased width
	proximal region that is a part_of a mandible, size that is not decreased size; anatomical projection that is a part_of a medial region part_of a mandible, absent; medial cotyla, size that is not decreased width
	medial region that is a part_of an anatomical projection and that is a bearer_of increased thickness, absent; sulcus that is a bearer_of a medial cotyla, absent; sulcus that is a part_of a mandible, absent
	proximal region that is a part_of a mandible, size that is not decreased size
(Optional)	Comments and feedback about this character and its annotations: Prev Next

Character Annotation Assessment from Phenoscape (Nesbitt et al. 2011)

Thank you!

Thank you very much for your help! It will be acknowledged in the manuscript.



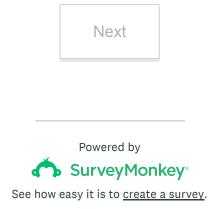
Character Annotation Assessment from Phenoscape (O'Leary et al. 2013)

Welcome to the Phenoscape Character Annotation Survey

We recently conducted an experiment involving systematic characters, where we compared the performance of a Natural Language Processing (NLP) system relative to the markup by humans. Characters from one of your publications (O'Leary et al. 2013) were randomly chosen for inclusion in this dataset. We are using a variety of metrics to assess the quality of machine vs. human curation, but your feedback as the author of the characters will provide insight into how well the meaning of each is represented in the annotations.

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1.	. Character 137: RPL max	xilla, palatal process,	suture with latera	l border of palatine,
or	rientation			

State 1: parasagittal

Barrier de Caller (a. Caller (a. Caller)			
position.	oices in order	ot preterence	e, with your top choice in the first
suture that connect a palatine bone, p		hat connects a l	ateral margin that is a part_of
palatine process of parasagittal	of maxilla that is co	onnected_to a p	alatine bone and bearer_of orientation,
palatine process of a bearer_of prese		. –	a, parasagittal; cranial suture that is
suture that is part_maxilla, parasagitt		e and that is par	rt_of a palatine process of
		•	axilla, and that is connected_to a lateral, a parasagittal plane
(Optional) Comments and feedl	back about this	s character a	nd its annotations:
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2. Character 3656: Pedal phalanges, Digit III, flexor sesamoid at the metatarsal-proxima
phalangeal joint, presence
State 1: present

Drag and drop the following choices in order of preference, with your top choice in the first position.

position.				
flexor sesar digit 3, pres		a metacarpal/tarsal-	phalangeal joint part_of a pedal	
flexor sesar III, present	moid that is connected_to	o a metatarsal-proxi	mal phalangeal joint of pedal digi	t
sesamoid b	one that is adjacent_to a	a metatarsophalange	eal joint part_of a digit 3, present	
flexor sesar	moid, present			
flexor sesar 3, present	moid that is a part_of a n	netatarsal-phalangea	al joint part_of a pedal digit	
(Optional) Comments and	feedback about this	S character and in	ts annotations:	
	Power	red by		

3. Character 1373: I2 distinctiveness of UI2 crown from root State 0: not differentiated from root

Drag and drop the fo position.	llowing choices in order	of preference, w	ith your top choice in the first
	crown that is a part_of a upporthat is a part_of a upper secon		ucture that is not distinct from, tooth
	crown that is a part_of a upporentiated from, tooth root that i		
tooth	crown that is a part_of a incis	sor tooth, undifferenti	ated
	crown that is a bearer_of pre	sent and that is part_	of a root, cellular quality that is
	crown that is a part_of a uppose a part_of a uppose a part_of a upper second in		orphologically similar to, a tooth root
(Optional) Comments	s and feedback about th	is character and i	ts annotations:
	√	ered by /eyMonkey °	

4. Character 1915: dP5 preprotocrista orientation on UdP5
State 1: oriented toward the mesial aspect of the paracone

Drag and drop the following choices in order of preference, with your top choice in the first position. preprotocrista, orientation preprotocrista that is a part_of a upper deciduous premolar 5, oriented towards, a mesial region that is a part of a paracone preprotocrista that is a part of a primary dentition, oriented towards, a medial region that is a part_of a paracone preprotocrista that is a part_of a upper deciduous premolar 5, oriented towards, a mesial side that is a part_of a paracone preprotocrista, oriented towards, mesial region that is a part_of a paracone (Optional) Comments and feedback about this character and its annotations: Prev Next Powered by SurveyMonkey®

5. Character 4271: UG tract - Oviduct mucosal folds

	al fold, present
oviduct mucos	al fold, distributed throughout
mucosa of ute	rine tube, located in, an oviduct
mucosal fold t	nat is a part_of an oviduct, present
oviduct mucos	al fold, located in, an oviduct
l) Comments and fe	edback about this character and its annotations: Prev Next

6. Character 1155: MAN dentary, body, inferior edge, shape in lateral view State 3: concavoconvex

Drag and d position.	op the following choices in order of preference, with your top choice in the fir
	ventral margin that is a part_of a dentary, concavo-convex
	dentary, concavoconvex
	ventral margin that is a part_of a dentary, concave; ventral margin that is a part_of a dentary, convex
	ventral margin that is a part_of a mandible, concavoconvex
	inferior side that is a part_of a dentary, concave; inferior side that is a part_of a dentary, convex
(Optional)	Comments and feedback about this character and its annotations:
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7. Character 1553: dp5 number of roots on Ldp5 State 1: incipient division of the root

Drag and drop the following cho position.	ices in order	of preference	, with your top ch	oice in the first
tooth root that is a p		lar tooth part_of a	a primary dentition tha	at attaches_to
root that is a bearer	of incipient, co	ount		
tooth root that is a p	part_of a lower	deciduous premo	ar 5, incipient division	า
tooth root that is a p	part_of a lower	deciduous premo	lar, split	
tooth root that is a p	part_of a lower	deciduous premo	lar 5, <mark>split</mark>	
(Optional) Comments and feedba	ack about thi	is character ar	nd its annotations	:
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8. Character 4109: Pelage - Basal bulb presence State 0: no basal bulb, proximal third of hair filament is of roughly uniform diameter Drag and drop the following choices in order of preference, with your top choice in the first position. proximal region that is a part of a hair shaft, uniform diameter coat of hair, present; basal bulb, present basal bulb, absent bulb of hair follicle that attaches_to a dorsum in vicinity_of a shoulder, absent basal region that is a part_of a bulb of hair follicle part_of a coat of hair, absent (Optional) Comments and feedback about this character and its annotations:

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9. Character 1047: BRC supraoccipital, nuchal crest, number per side
State 1: two, splits dorsally into anterior and posterior crests, which together outline a
raised triangular area on the dorsal surface of skull roof

Drag and drop the following choices in order of preference, with your top choice in the first position. nuchal crest, count, 2; nuchal crest, split; dorsal surface that is a part of a supraoccipital bone, triangular; dorsal surface that is a part_of a supraoccipital bone, raised nuchal crest, split anatomical projection that is a part_of a dorsal part of neck that is a bearer_of count and anatomical projection that is a part_of a dorsal part of neck and bearer_of has number of that is part_of a parietal-supraoccipital, count nuchal crest, count, 2; dermatocranium, triangular nuchal crest, count, 2; dorsal surface that is a part_of a supraoccipital bone, triangular; dorsal surface that is a part of a supraoccipital bone, raised (Optional) Comments and feedback about this character and its annotations: Prev Next

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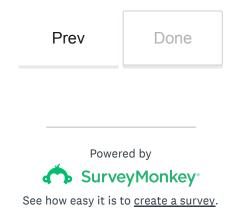
10. Character 1915: dP5 preprotocrista orientation on UdP5 State 2: oriented toward the apex of the paracone

Drag and opposition.	drop the following choice	es in ordei	of preference	ce, with your top choice in th	ne first
	preprotocrista, orientat	ion, an apex	of paracone		
	preprotocrista that is a of paracone	part_of an ι	upper deciduous	s premolar 5, oriented towards, an	apex
	preprotocrista, oriented	d towards, ti	p that is a part_	of a paracone	
	preprotocrista that is a a part_of a paracone	part_of a up	pper deciduous	premolar 5, oriented towards, a tip	that is
	preprotocrista that is a a part_of a paracone	part_of a pr	imary dentition,	oriented towards, a tooth apex the	at is
(Optional)	Comments and feedback	Prev	is character a	and its annotations:	
		√	ered by /eyMonkey °		

Character Annotation Assessment from Phenoscape (O'Leary et al. 2013)

Thank you!

Thank you very much for your help! It will be acknowledged in the manuscript.

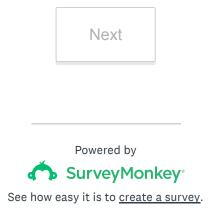


Welcome to the Phenoscape Character Annotation Survey

We recently conducted an experiment involving systematic characters, where we compared the performance of a Natural Language Processing (NLP) system relative to the markup by humans. Characters from one of your publications (Skutschas and Gubin 2012) were randomly chosen for inclusion in this dataset. We are using a variety of metrics to assess the quality of machine vs. human curation, but your feedback as the author of the characters will provide insight into how well the meaning of each is represented in the annotations.

We use an ontology-based representation to annotate systematic characters, in which ontology terms for anatomical structures such as eye or vertebra are combined with quality terms representing a trait or property that a structure possesses, such as round or silver. Thus a character state that you may have described as "eyes, round" would be annotated as 'eye, round'. Sometimes multiple structures are related to each other; for example, 'parietal, fused with a supraoccipital'. Finally, terms can be combined to create more specific terms (post-composition). For example, the presence of a projection on the parietal bone is represented as: 'projection that is part_of a parietal, present'. (Background information - not essential for completing the survey - on the syntax and standards used for character annotation can be found on the Phenoscape wiki, and ontology terms can be searched on Ontobee).

In this survey you'll be presented with ten characters randomly chosen from your publication, and a set of 5 annotations for each character. Please rank the annotations in order of preference, with your top choice, i.e., the annotation that best represents the meaning of the character state, in the first position.



osition.	drop the following choices in order of preference, with your top choice in the fire
	dorsal cloacal gland that is a part_of a male organism, absent
	gland that is a part_of a dorsal region part_of a male organism, absent; gland that is a part_of a ventral region part_of a male organism, absent
	dorsal glands, absent; ventral glands, absent
	male dorsal gland that is a part_of a male organism, absent; ventral glands that are a part_of a male organism, absent
	anatomical entity that is a part_of a male organism, absent; ventral glands, absent
Optional)	Comments and feedback about this character and its annotations: Prev Next

2. Charac	cter 33: Frontal/maxillary contact:
State	0: frontal and maxilla separated by prefrontal

maxilla that is in_left_side_of a multicellular organism, separated from, a maxilla that is in_right_side_of a multicellular organism tetrapod frontal bone, separated from, a maxilla tetrapod frontal bone, separated from, a tetrapod frontal bone; tetrapod frontal bone, i contact with, a prefrontal bone tetrapod frontal bone, separated from, a prefrontal bone tetrapod frontal bone, separated from, a prefrontal bone tetrapod frontal bone, separated from, a prefrontal bone		od frontal bone, separated frontal part_of a maxilla	om, an anatomical projection that is a part_of a dorsa
tetrapod frontal bone, separated from, a tetrapod frontal bone; tetrapod frontal bone, i contact with, a prefrontal bone tetrapod frontal bone, separated from, a prefrontal bone tional) Comments and feedback about this character and its annotations:			
tetrapod frontal bone, separated from, a prefrontal bone tional) Comments and feedback about this character and its annotations:	tetrapo	od frontal bone, separated fro	om, a maxilla
ional) Comments and feedback about this character and its annotations:		•	om, a tetrapod frontal bone; tetrapod frontal bone, in
	tetrapo	od frontal bone, separated fro	om, a prefrontal bone
Prev			
	ional) Comments	and feedback about thi	is character and its annotations:

3.	. Character 21: Four facetted a	rticulation o	f exoccipital	and a	atlas
	State 0: absent				

position.	drop the following choices in order of preference, with your top choice in the first
	cervical vertebra 1 that has_part a vertebral arch joint and bearer_of multifid, absent
	facet that is a part_of an exoccipital-atlas joint, structure
	facet that is a part_of a exoccipital-atlas joint, count, 4; facet that is a part_of a exoccipital-atlas joint, structure
	four facetted articulation of exoccipital and atlas, absent
	articulation that is a part_of a cervical vertebra 1, count that is not present; articulation that is a part_of a cervical vertebra 1, count that is not count
(Optional)	Comments and feedback about this character and its annotations:
	Prev Next
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4. Character 30: Dermal sculpture on skull roof

Orag and drop position.	the following ch	oices in order	of preference, with your top choice	e in the fir
	dermatocranium, s	culpted surface		
	dermatocranium, v	veakly sculpted s	urface	
	dermatocranium, r	present; dermate	ocranium, decreased strength	
	dermatocranium th	nat is a bearer_o	a sculpted surface, decreased magnitude	
	surface sculpting t	hat is a part_of a	dermatocranium, poorly developed	
Optional) Cor	nments and feedb	pack about thi	s character and its annotations:	
		Prev	Next	
		<u>×</u>	ered by eyMonkey	

Orag and drop the following operation.	hoices in order of preference, with your top choice in	n the f
	at is a part_of a cervical vertebra 1, increased length, a vertebra cervical vertebra 1	that
	n that is a part_of a cervical vertebra 1, increased length, a vertebra part_of a cervical vertebra	bral
vertebral centru	n, increased length	
	at is a part_of a vertebral bone 1, length that is agnitude_relative_to a vertebral book agnitude_relative_to a vertebral book agnitude_relative_to a vertebral book agnitude_relative_to a vertebral book agnitude.	ne 1
	length that is increased_in_magnitude_relative_to a length postatlantal vertebra	
Optional) Comments and fee	dback about this character and its annotations: Prev Next	
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6. Character 22: Postatlantal ribs

State 0: bicapitate

Drag positi	and drop the following choices in order of preference, with your top choice in the first
	head of rib, bifurcated
	head of rib that is connected_to a vertebral element that is posterior_to a vertebral bone 1, count, 2
	rib that is posterior_to a cervical vertebra 1, bicapitate
	rib that is a part_of a postatlantal vertebra, bicapitate
	postatlantal vertebra, bicapitate
(Optio	onal) Comments and feedback about this character and its annotations:
	Prev Next
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	See how easy it is to <u>create a survey</u> .

7. Character 23: Atlantal spinal nerve foramen

rcular
_of a cervical vertebra 1, surrounding, a nerve
nclosed
ructure
nclosed by, a bone tissue
this character and its annotations:
rı

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8. Character 63: Vomerine dentition:

	vomerine dentition, position, a medial region that is a part_of a palate bone
	vomerine dentition, medial to, a roof of mouth
	vomerine dentition, position, a medial region that is a part_of a primitive palate; vomerine dentition, transverse plane
	vomerine dentition, transverse orientation; vomerine dentition, position, a medial region that is a part_of a vomer
	vomerine dentition, present
otiona	Prev Next

9.	. Character 53: Number of free ribs on anterior caudal vertebrae
	State 0: more than three pairs

Drag and drop the following choposition.	pices in order of preference, with your top choice in the first
free rib, count, >3 p.	pairs
free rib that is a part	rt_of a caudal vertebra part_of an anterior region part_of some tail,
rib that is connected	d_to a caudal vertebra, count, 3+
floating rib, count, >	>3 pairs
free rib that is a part	rt_of an anterior region part_of a caudal vertebra, count
(Optional) Comments and feedba	ack about this character and its annotations: Prev Next
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Thank you!

Thank you very much for your help! It will be acknowledged in the manuscript.

