ASSESSMENT FOR CERTIFICATION OF COMPETENCE IN FETAL MORPHOLOGICAL EXAMINATION

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Royal Society of Biology

THE INTERNATIONAL REGISTER OF FETAL MORPHOLOGISTS

THIS FORM WAS UPDATED IN JANUARY 2013 – CHECK THAT YOU ARE USING THE CORRECT VERSION

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate: Toni Carpenter

Name of Applicant (Laboratory):	Toni Carpenter, Charles River Laboratory
Examination type assessed (species):	**FRESH EXTERNAL AND VISCERAL EXAMINATION** Rat
Date of assessment:	13 December 2018
Names of assessors:	Lorrie Posobiec Bill Nadland

Specimens used for assessment: [insert Study code, litter and fetus ID in each box]

1	2	3	

Key for abbreviations:

P – Needed prompting
PP – Needed frequent prompting
N – Nervous
VIP – Volunteered information previously
DK – Didn't know the answer
NC – Not consistent in technique

Assessor's Summary:

[delete or underline to highlight the appropriate description from the options below:]

Competent / competent and focussed / engaged and focussed during the assessment, and demonstrated / effectively communicated a sound knowledge / an impressive understanding / of all aspects

Assessor signatures [signature] / Lorraine M. Posobiec

Date 13 Dec 2018

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

COMMENTS FROM LABORATORY SPECIMEN EXAMINATION: [insert free text in boxes]

Talk through/procedure

Question	Acceptable Response	Response
Describe to me what you are doing; what do you see; what are you looking at?	Separation Moving Dissecting/clearing Turning specimen Examination from all sides Manipulation for clarification	External | Visceral Starts with head; ears head position size, eyes eye lids; facial papillae (5), Nares position and opening; lips are smooth no cleft; mouth tongue; wiskers; jaws are normal size then to ventral surface working from top to bottom forelimbs ~~are~~ examined and digits (5) then down to hindlimbs for size and shape then hindpaws and digits (5) sex determined and anus and tail examined then the dorsal surface examined during the external ~~exam and then look~~ visceral exam as found they are entered External yes Visceral yes
What are you looking at now? Describe what you see		
Note how candidate is recording observations – as they are found or at the end of the examination?	at the end for external for conformation; during	
Confirm that specimen is being manipulated appropriately.		

umbilical artery is examined during the abdominal opening; exams diaphragm for defects then opens the thoracic cavity and examines tissue in situ; liver examined all lobes named; on to stomach spleen, Pancreas possible accessory spleen's; ~~gastric~~ GI tract examined to rectum, kidneys; adrenal renal vein, ureter possible dilation; abdominal aorta; sex with testes epididymis examined then moved up left side to left kidney & ureter cut both kidneys lungs lobes named; heart examined; thymus back side

The great vessels were examined and their locations/origins verified. The lesser vessels examined and described; then right side of heart up into the pulmonary trunk cut is made: inside of heart and valves named and examined; then a cut into left ventricle is made up into the aortic arch, examined salivary glands, larynx and thyroid and parathyroid. esophagus and trachea examined; look for defects between trachea and esophagus; examined oral cavity again.

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Consistency in procedural routines

Question	Acceptable Response	Response
Can you think what the importance of consistency in magnification across examiners might be?	Consistency is important so that all examiners see and record to the same level of detail.	all examiners use same magnification for consistency; will scope down when needed
Do you always use the same sequence and routine for examination? Why do you think that it is important?	Yes – don't miss anything, important for pattern recognition, subconscious alert.	yes
Do you think it is necessary to look at structures from more than one aspect?	Yes - gain clear view of 3D structures, enable all structures/aspects of structures to be seen clearly.	yes
Which structures would you examine in situ before you go on to disturb the viscera?	E.g. position of heart in thorax, thymus, cranial vena cavae, diaphragm before thorax is opened, ureters before sectioning kidney, eye bulge	

Terminology and recognition levels used

Question	Acceptable Response	Response
How do you ensure other examiners are using the same terms as you for the same observation?	User guides and recognition levels Discuss with colleagues	
How do you decide whether or not to record observations?	Reference material, user guides, laboratory recognition levels, background data	meets lab standards to be recorded
What could you do to make sure that you've chosen the most accurate term?	Peer review/consistency check (examiner records should be traceable)	and training guide

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Terminology and recognition levels used

Question	Acceptable Response	Response
Would you assign a severity level, why?	User guides and recognition levels Discuss with colleagues	some finding have severity kidney and ureter
How do you ensure other examiners are using the same severities as you for the same observation?	Reference material, user guides, laboratory recognition levels, background data Peer review/consistency check (examiner records should be traceable)	

Recognition of artefacts

Question	Acceptable Response	Response
How would you decide if real or artefact?	Is the structure an unusual colour (haemorrhage)? Background knowledge/experience Refer to PM data (specimen dropped?)	
What procedural errors are likely to lead to artefacts?	Unsuitable mode of death (e.g. too much pentobarbitone or inappropriate site for injection) Flattening on one side of head or apparent forelimb flexure due to the way it was laid on tray/bench Digit/tail/pinna damage – cut edge, evidence of bleeding Blood vessel damage, trace the route to find each end	a artefact will generally be ~~just~~ not smooth
Can you think of any observations which could be caused by an artefact?	Missing digits/tail/pinna, Intraabdominal/hepatic/sub cutaneous haemorrhage, umbilical hernia, forceps damage to palate	improper handling causes hemmorhage abdominal wall damaged

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Recognition of artefacts

Question	Acceptable Response	Response
Would you record artefacts? How would you record an artefact?	record Explain how	yes there is a form to ~~not~~ artefacts to alert subsequent exams

Correct identification of anomalies

Question	Acceptable Response	Response
What could you do to make sure that you've chosen the most accurate term?	Discuss/review findings with colleagues; refer to recognition levels/user manuals/training /reference material/background data.	Making and other research
Why have you used that term? (any observation with a recognition level, relative to the norm)	Give reason based on degree of displacement, normal variation. Based on symmetry; alignment; position in relation to other structures, normal variation	
How would you decide if you thought one pinna was displaced?	Give reason based on degree of displacement, normal variation, alignment; position in relation to other structures, normal variation; compare to normal specimen	peer review
What anomalies might you see in the ...../state region?. trachea/esophagus		fistula; esophagus not connected to stomach
What anomalies might you see in the ...../ state region? external head		meningoencephalocele meningocele exencephaly open eye lids described the difference
What anomalies might you see in the ...../state region?		

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Demonstration of knowledge of consequence of findings (choose minimum of 3 from this section)

What else might you see with:		
Absent pollex [at external observation]	Other short digits/absent claws	
1 Absent tail [at external observation]	Imperforate anus. Check stomach contents/presence of meconium, patency of anus	could be problems with vertebral column
Dilated ureter	Renal pelvic cavitation, large urinary bladder, kinked ureter	
2 Short lower jaw	Large/small/protruding tongue, absent incisors, size of oral cavity	compression fetus
3 Distended abdomen	Fluid in abdominal cavity, changes in size, shape, position and presence of great vessels. Malrotated heart, formation of ventricular septum. Check stomach contents/presence of meconium, patency of anus. Form of liver, abdominal wall musculature, umbilical vessels.	
Flat cranium / occipital projection	Spina bifida (open or skin covered)	
Skin lesion/haemorrhage cranium / dorsal midline	Meningocoele/spina bifida (skin covered)	
Malrotated heart	Changes in size, shape, position and presence of great vessels. Formation of ventricular septum.	
Whole body oedema	Changes in size, shape, position and presence of great vessels. Malrotated heart, formation of ventricular septum. Form of liver, abdominal wall musculature, umbilical vessels. Kidney size and form (pelvic dilation, enlargement), cleft palate.	

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Demonstration of knowledge of consequence of findings (choose minimum of 3 from this section)

What else might you see with:		
What would you expect to record in association with low fetal weight	Thin, translucent, shiny fragile skin, oedema over snout, domed cranium, apparent change in size of eye bulge, non-eruption of incisors, poorly defined digits, apparently larger genital papilla, difficulty in determining external sex. Lungs not expanded, kidney – dilated pelvis/ureters, testes high, pronounced umbilical vessels [Check day of PM if whole litter affected]	cleft palate (may have skeletal issues)
What might you find in association with high fetal weight	May be oedematous, thick skin, eruption of incisors [Check day of PM if whole litter affected]	
Dilated major blood vessel (aorta, pulmonary trunk)	Narrow/absent/malpositioned major blood vessel (aorta, pulmonary trunk), ventricular septal defect, malrotated heart, abnormal lung lobation, fluid in thoracic/abdominal cavities/oedema	

4

Awareness of importance of communication lines as reaction to unusual findings

Question	Acceptable Response	Response
What would you do if you had never seen a finding before? What would you do if you were unsure how to describe an observation?	Describe what is seen, discuss/review findings with colleagues, refer to recognition levels/user manuals/training /reference material/background data	use Mekris, peers, Senior individuals

LABORATORY LITTER ASSESSMENT – FRESH EXTERNAL AND VISCERAL EXAMINATION

Name of Candidate:___Toni Carpenter_____

Additional comments

ASSESSMENT FOR CERTIFICATION OF COMPETENCE IN FETAL MORPHOLOGICAL EXAMINATION

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Royal Society of Biology

THE INTERNATIONAL REGISTER OF FETAL MORPHOLOGISTS

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: Toni Carpenter

Name of Applicant (Laboratory):	Toni Carpenter, Charles River Laboratory
Examination type assessed (species):	**EXTERNAL AND VISCERAL RAT**
Date of assessment:	13 December 2018

Specimens used for assessment: [insert fetus ID in each box]

1	4	6	8	d	

Key for abbreviations:

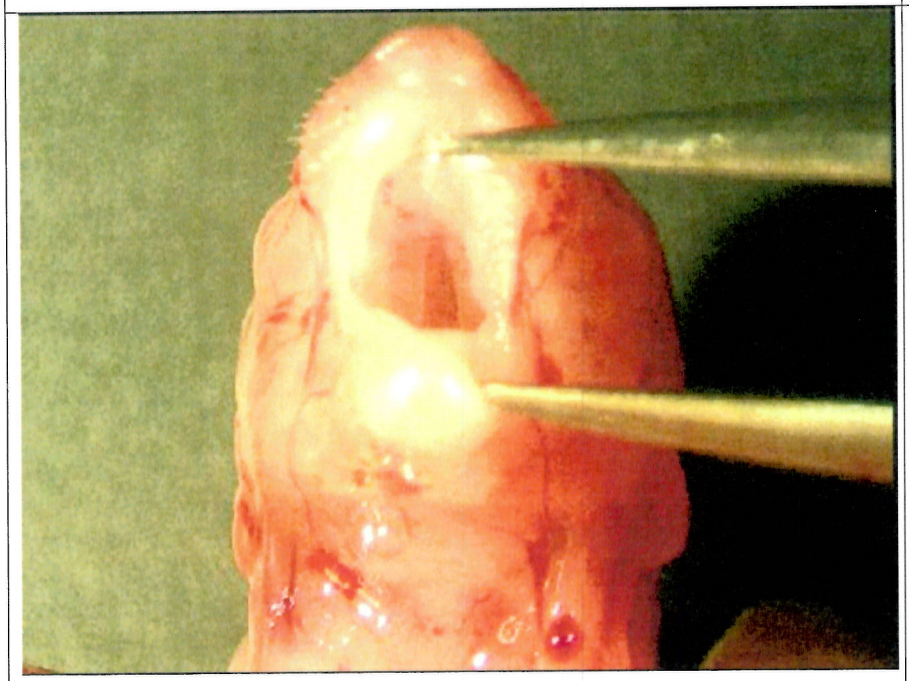
P – Needed prompting
N – Nervous
DK – Didn't know the answer
PP – Needed frequent prompting
VIP – Volunteered information previously
NC – Not consistent in technique

Assessor signature Lorraine M. Rossi

Date 13-Dec-2018

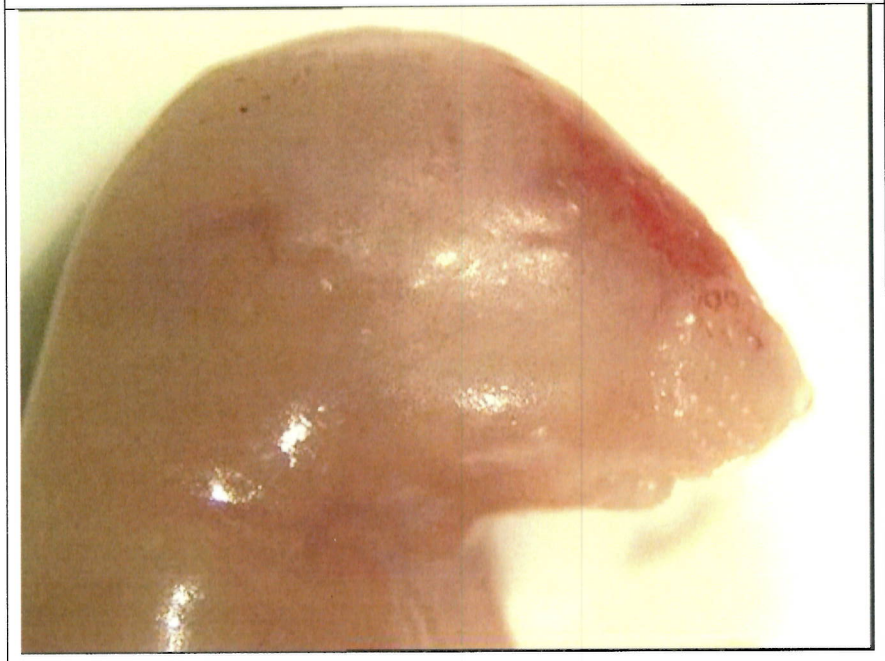
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 1	Questions	Answers given
	**What can you see?** • Cleft (secondary) palate **What else might you see/consider?** • Possible misshapen/ protruding tongue • Are there any problems with incisor sockets, lower jaw, maxillary region or eye sockets? **Other points** • Are cleft palates always this easy to see? • What other defects are often associated with cleft palate? • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why?	not more rostral or a cleft lip sometimes absence of incisors sometimes more in back mammae

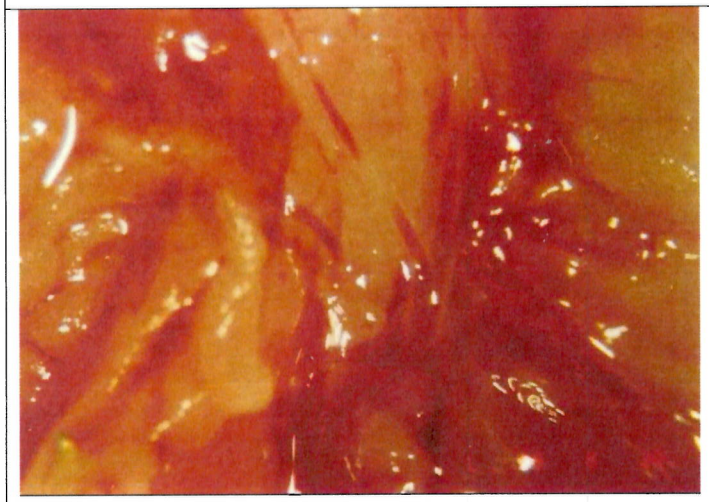
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 4	Questions	Answers given
	**What can you see?** • Eye bulge reduced ~~in size~~ (indicates possible micro/anophthalmia) • Shortened lower jaw • Misshapen/malpositioned pinna – don't see pinna – love to get my hands on it. look at other side, compare to normal. • Domed cranium • Pointed snout/~~naris~~ possibly single naris **What else might you see/consider?** • Microstomia size of mouth • Microglossia size shape etc of tongue **What else would you consider** • Incisors/sockets, orbits • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why? – bone structure of lower jaw / orbit however Harrisons eye, ear, nasal passages maybe better	palate problem

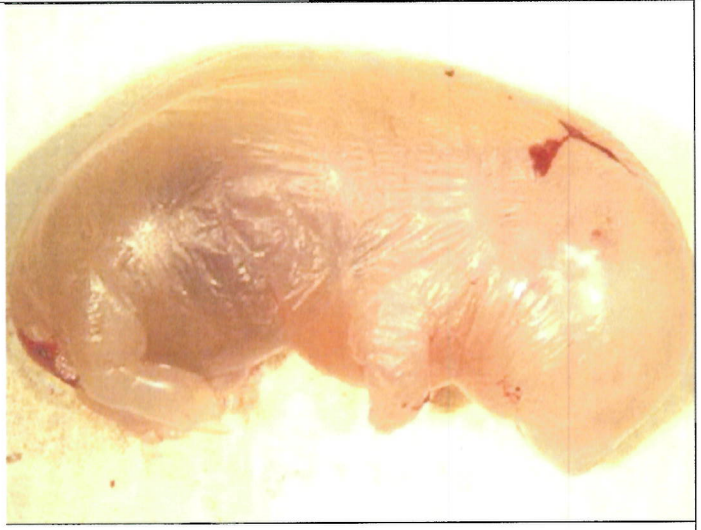
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 6	Questions	Answers given
	**What can you see?** • Retro-oesophageal right subclavian artery **What else would you consider?** • Are there any other defects usually associated with this observation? • Ventricular septal defect	retro esophageal rt subclavian or aortic arch or right sided AA would like to manipulate

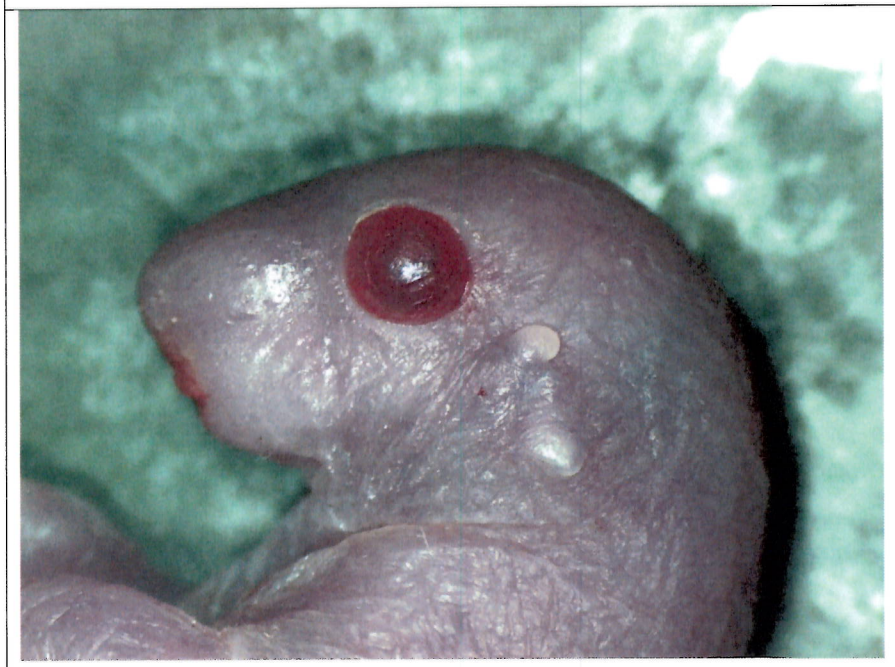
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 8	Questions	Answers given
	**What can you see?** • Anasarca (oedema) whole body • Shortened lower jaw **What else might you see/consider?** • Microstomia • Microglossia • Eye bulge difficult to assess because of oedema, a reduction in size may indicate possible micro/anophthalmia) • Heart/vessel defect(s) **What else would you consider** • Incisors/sockets, orbits • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why?	short body, but would want to compare ε normal can't see tail - could be anal atresia √ for circulation underdeveloped kidney, distended ureters, GU issue - would go either way, no justification to switch

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image d	Questions	Answers given
	**What can you see?** Left eyelid absent/open eye *lid* **What else might you see/consider?** Dark eye Haemorrhage? *iris + ring around it.* Large? Bulging? Pinna malpositioned/low set Skin tag - *enlarged facial papilla* Short lower jaw/brachignathia **Other points** Secondary palate cleft? Check for microstomia/small mouth Check nares Process for skeletal	*whole front of face short possibly look at tongue*

ASSESSMENT FOR CERTIFICATION OF COMPETENCE IN FETAL MORPHOLOGICAL EXAMINATION

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Royal Society of Biology

THE INTERNATIONAL REGISTER OF FETAL MORPHOLOGISTS

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: Toni Carpenter

Name of Applicant (Laboratory):	Toni Carpenter, Charles River Laboratory
Examination type assessed (species):	**EXTERNAL AND VISCERAL RAT**
Date of assessment:	13 December 2018

Specimens used for assessment: [insert fetus ID in each box]

1	4	6	8	d	

Key for abbreviations:

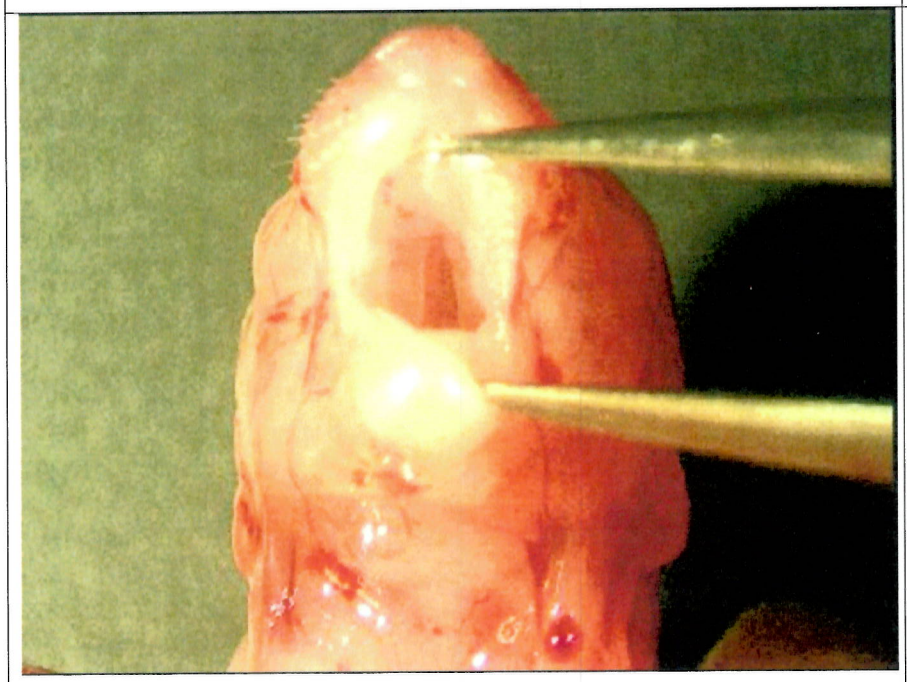
P – Needed prompting
N – Nervous
DK – Didn't know the answer
PP – Needed frequent prompting
VIP – Volunteered information previously
NC – Not consistent in technique

Assessor signature

Date 13 December

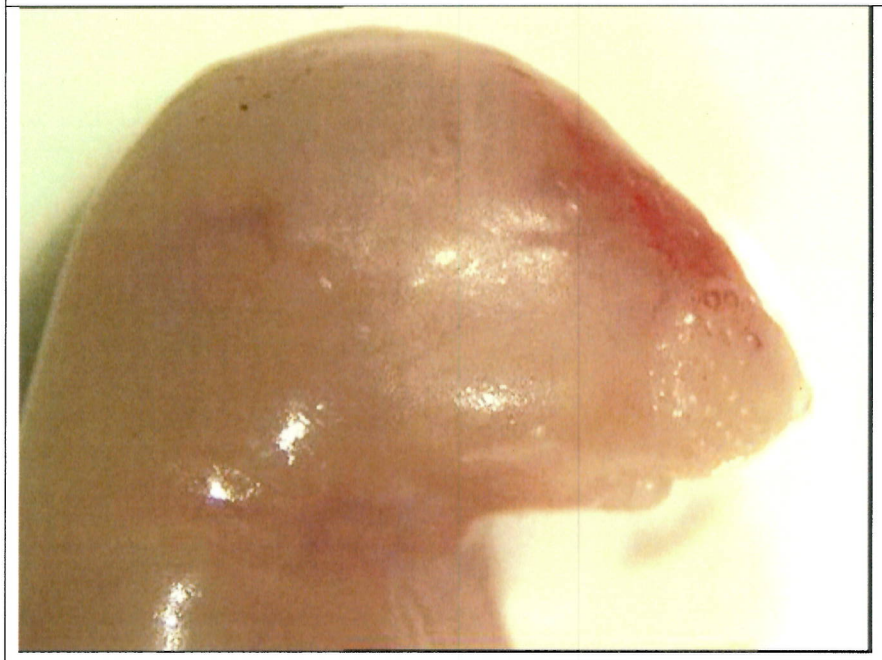
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 1	Questions	Answers given
	**What can you see?** • Cleft (secondary) palate **What else might you see/consider?** • Possible misshapen/ protruding tongue • Are there any problems with incisor sockets, lower jaw, maxillary region or eye sockets? **Other points** • Are cleft palates always this easy to see? • What other defects are often associated with cleft palate? • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why?	make sure it is for ~~S~~ Wilsons possible nasal or head defects could be incisor issues Not always yes see above

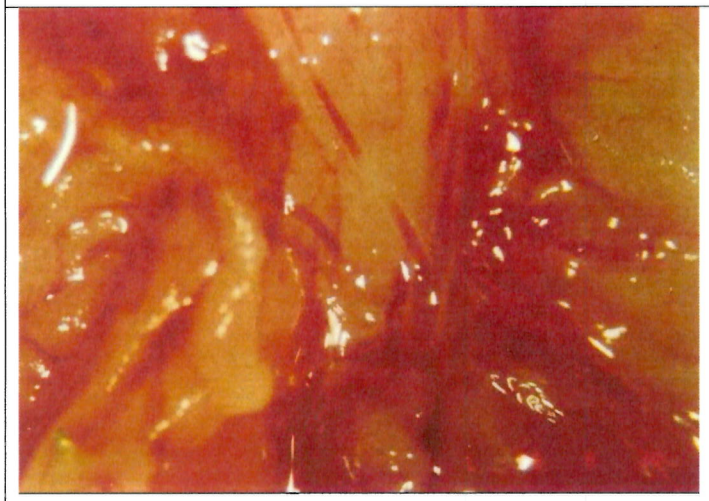
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 4	Questions	Answers given
	**What can you see?** • Eye bulge reduced in size (indicates possible micro/anophthalmia) • Shortened lower jaw • Misshapen/malpositioned pinna • Domed cranium • Pointed snout/naris **What else might you see/consider?** • Microstomia size of mouth • Microglossia size shape etc of tongue **What else would you consider** • Incisors/sockets, orbits • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why?	misshapen or absent single naris palate tissue? look at other side and a normal fetus Skeleton may be better because of jaw and eye but Hassenson's would also help

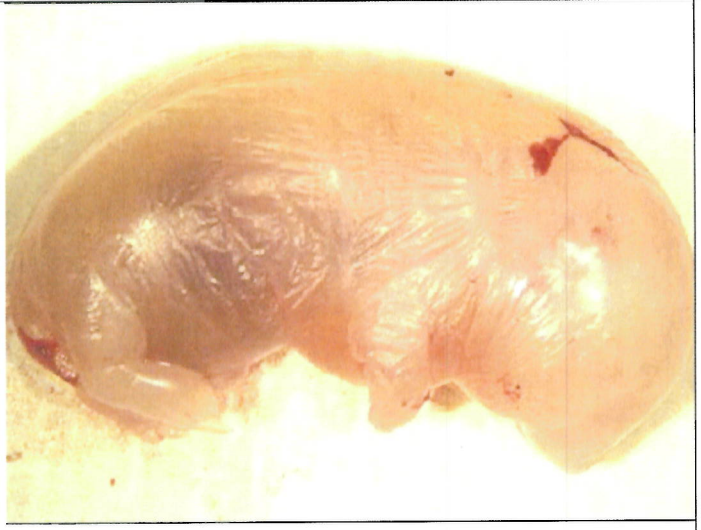
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 6	Questions	Answers given
	**What can you see?** • Retro-oesophageal right subclavian artery **What else would you consider?** • Are there any other defects usually associated with this observation? • Ventricular septal defect	aortic arch possible need to examined closer

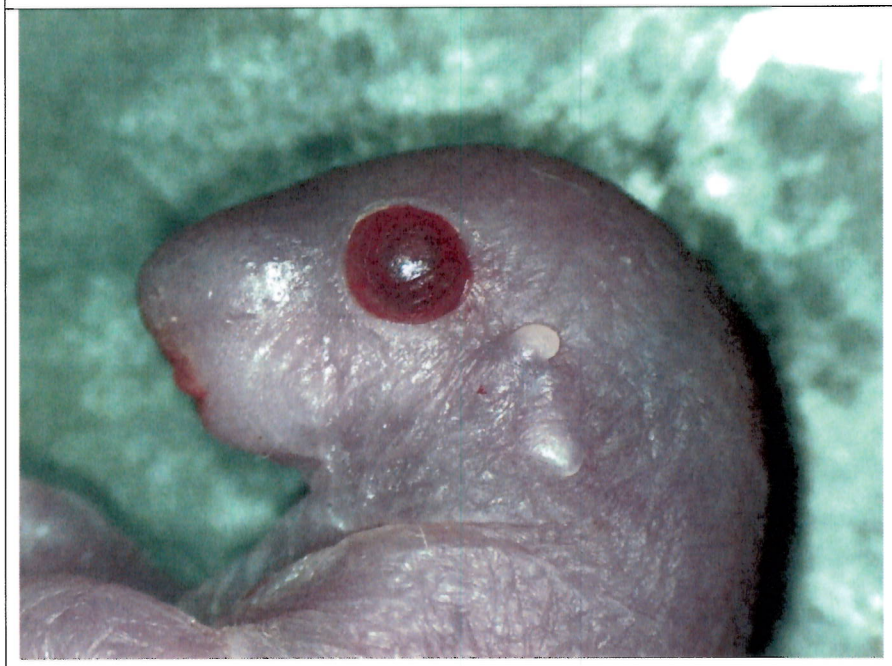
RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image 8	Questions	Answers given
	**What can you see?** • Anasarca (oedema) • Shortened lower jaw **What else might you see/consider?** • Microstomia • Microglossia • Eye bulge difficult to assess because of oedema, a reduction in size may indicate possible micro/anophthalmia) • Heart/vessel defect(s) **What else would you consider** • Incisors/sockets, orbits • Would you recommend that fetuses with such an observation were further examined skeletally or following Bouin's fluid fixation – why?	whole body edema maybe whole fetus is short; is tail present? circulation issues kidneys ok? great vessel issues Probably skeletons; most findings

RAT FRESH EXTERNAL AND VISCERA IMAGES FOR CERTIFICATION

Name of Candidate: _____Toni Carpenter_____

Image d	Questions	Answers given
	**What can you see?** Left eyelid absent/open eye **What else might you see/consider?** Dark eye Haemorrhage? Large? Bulging? Pinna malpositioned/low set Skin tag or facial papilla Short lower jaw/brachignathia **Other points** Secondary palate cleft? Check for microstomia/small mouth Check nares Process for skeletal	Iris? tongue protruding?