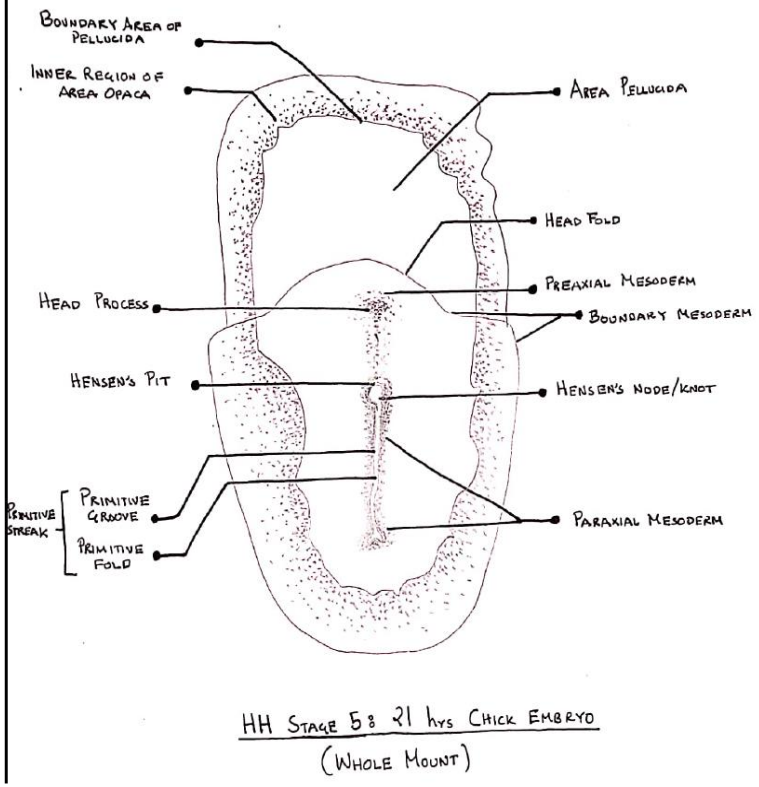
HH STAGE 4 (DEFINITIVE STREAK)
18-19 HRS

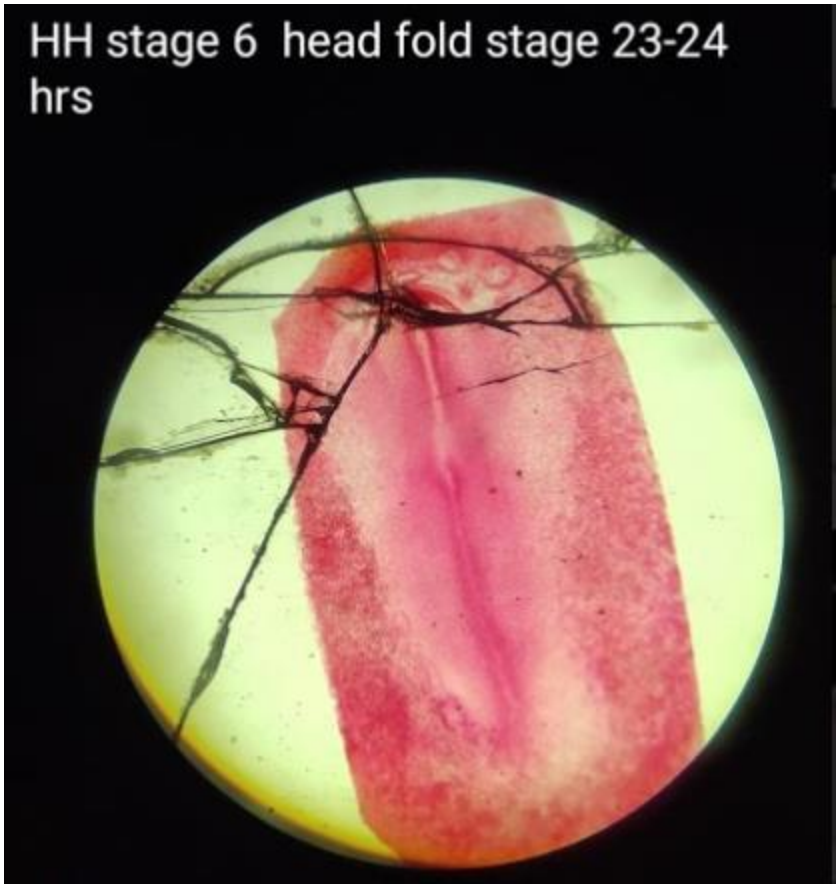


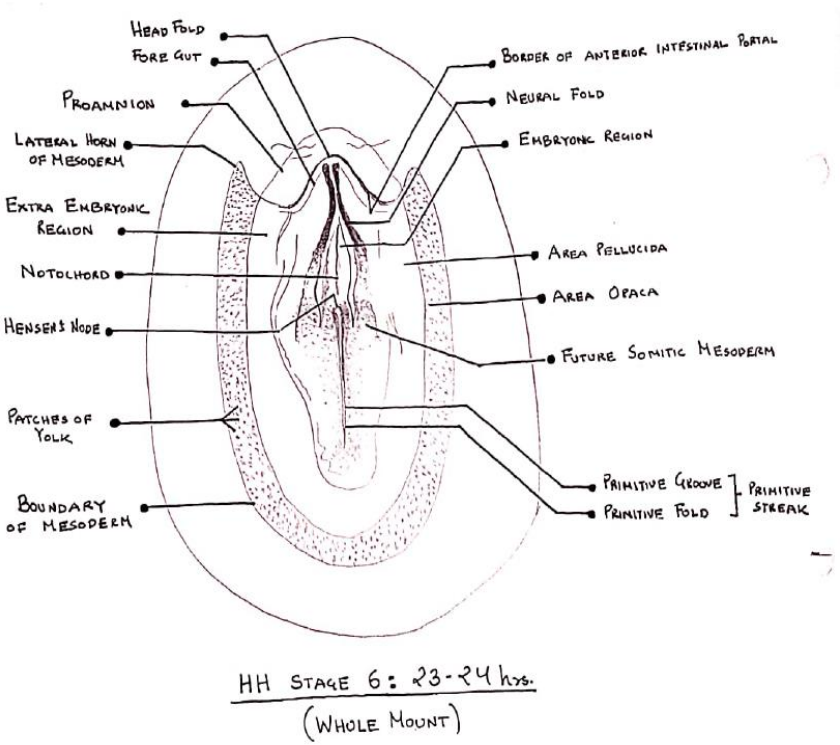
HH Stage 5 : 21 hrs Chick Embryo
(Whole Mount)

The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
19-22 h	5	13a	The head process (notochordal process)		

HH STAGE 6(HEAD FOLD)
23-24 HRS

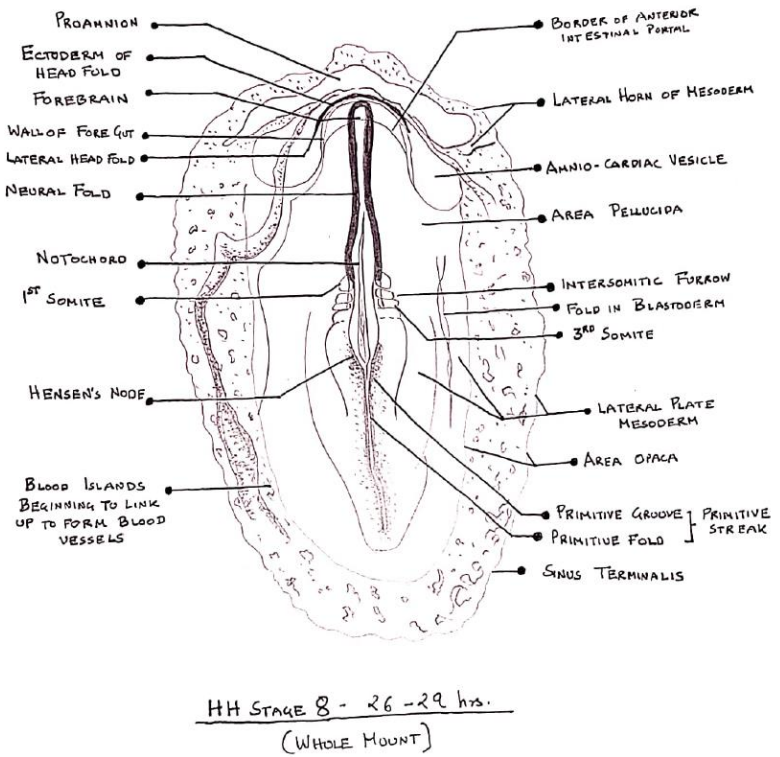




The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
23-25 h	6	13b	The head fold	The head fold begins to appear as an intact semilune pleat.	

HH STAGE 8-(3 PAIR OF SOMITES) 26-29 HRS



The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
23-26 h	7 -8-	14b	1-3 individual somites, body cavity	fold forms. The neural fold developments obviously and the two sides are drawn close to each other.	The endocardial primordium gets closed and combined

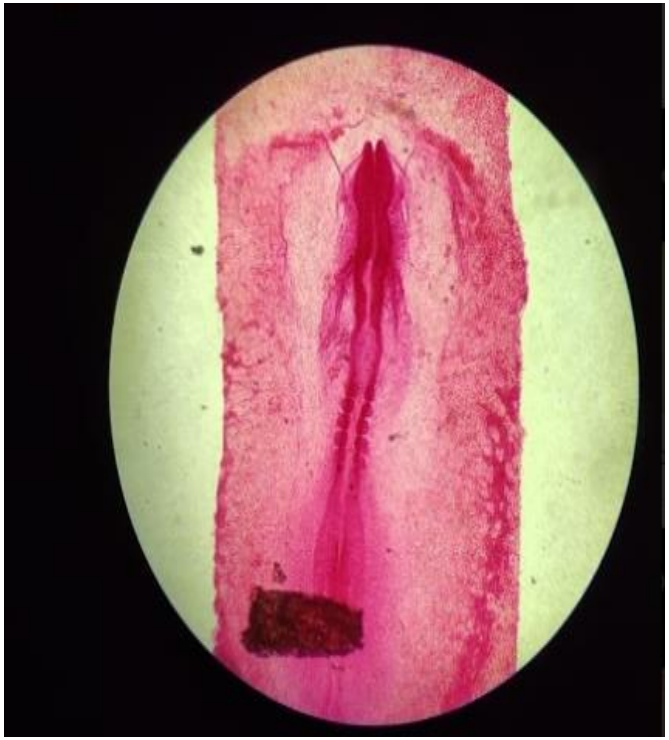


Table 1: The morphology standard of the developmental stages of chick embryo

Incubation	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
26-29 h	8	14c	4 somites and the blood island	4 individual somites; The neural ditch takes shape, still keeping open; the dorsal view shows that the edge of neural folds on two sides draw close to each other, but don't meet yet and spread forward and backward; the ventral view shows the obvious semilune of the anterior intestinal portal edge	The straight cardiac tube appears

HH STAGE 9-(6 PAIR OF SOMITES) 29-33 HRS

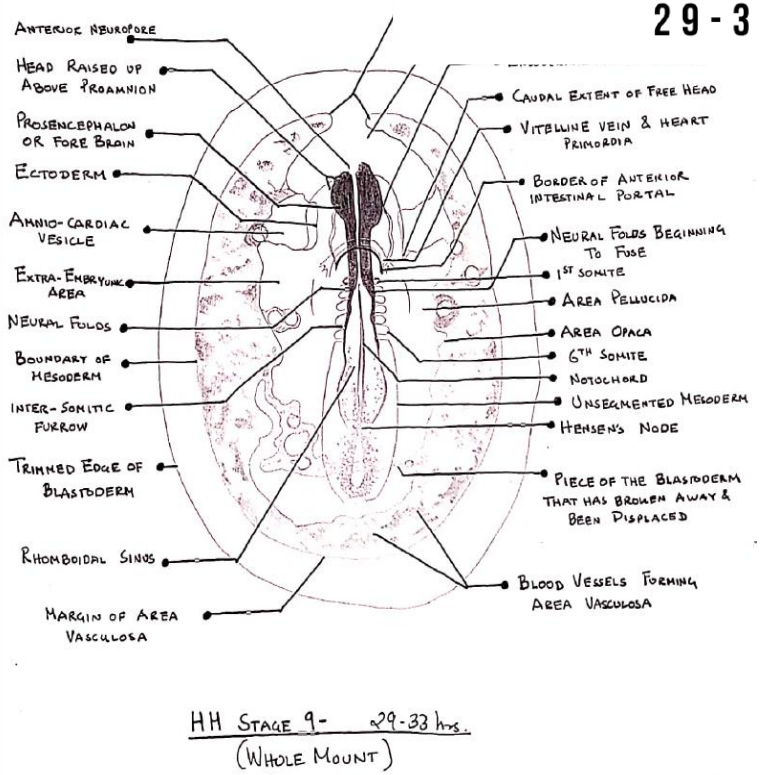
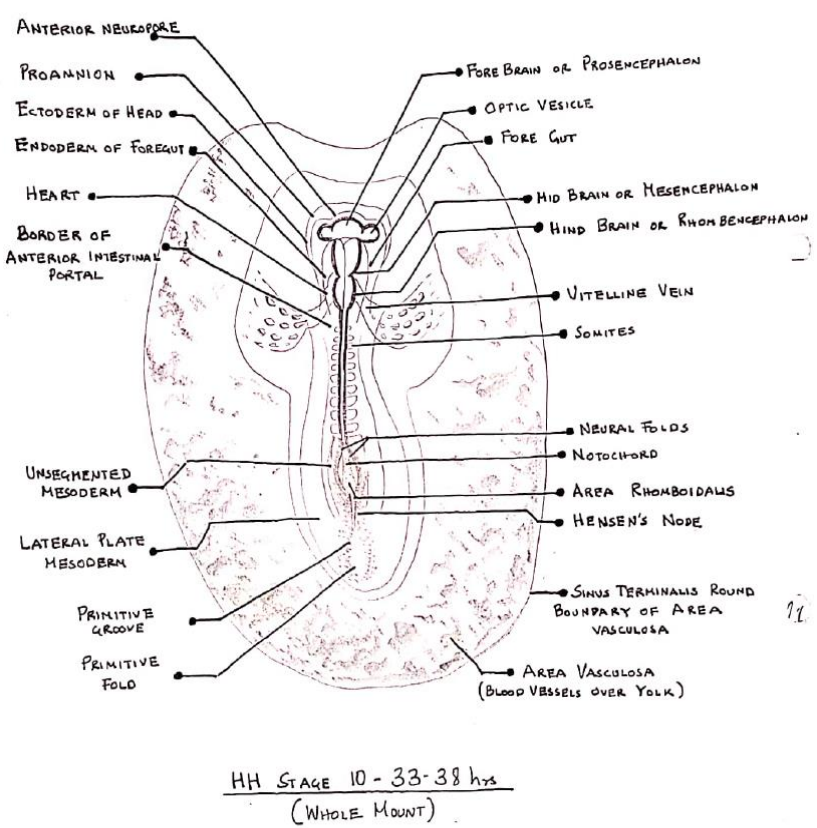


Table 1: The morphology standard of the developmental stages of chick embryo

hours	on	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
29-33 h		9 -	15a	6 mites and primitive ocular vesicle	7 individual somites; the dorsal view shows that the rostral end of the neural tube enlarges obviously compared with the caudal end and that the edge of the neural fold moves to midline; the ventral view shows that the anterior intestinal portal edge descends but still keeps the semilune shape.	The cardiac tube extends constantly, combines from the caudal end to rostral end and forms a joined cardiac tube as a result.

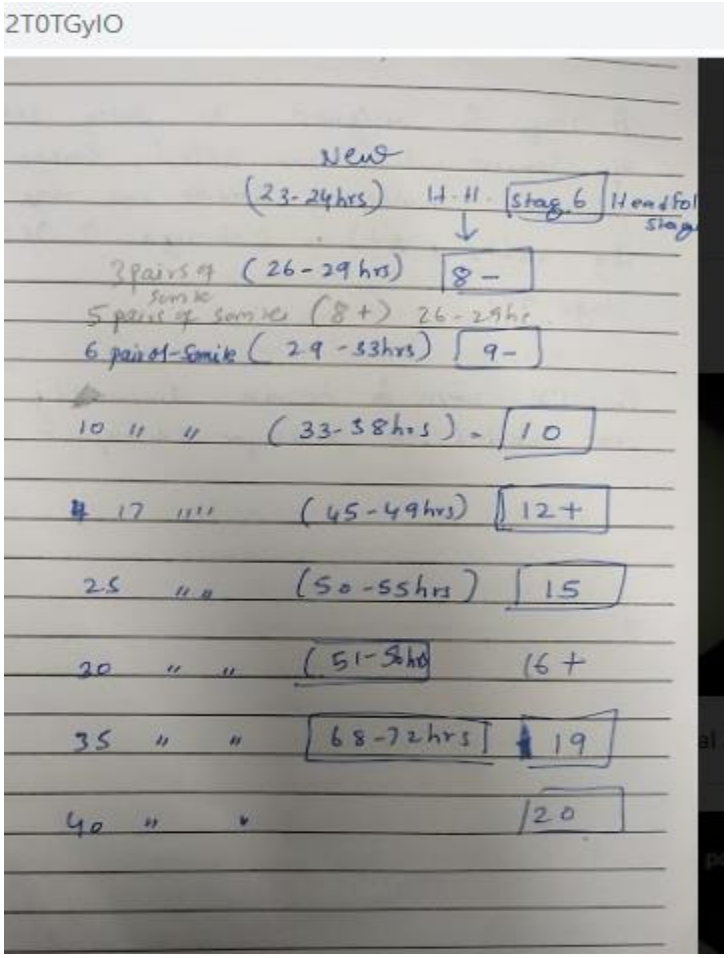
HH STAGE 10 (10 PAIR OF SOMITES)
33-38 HRS



HH STAGE 10 - 33-38 hrs
(WHOLE MOUNT)

The morphology standard of the developmental stages of chick embryo

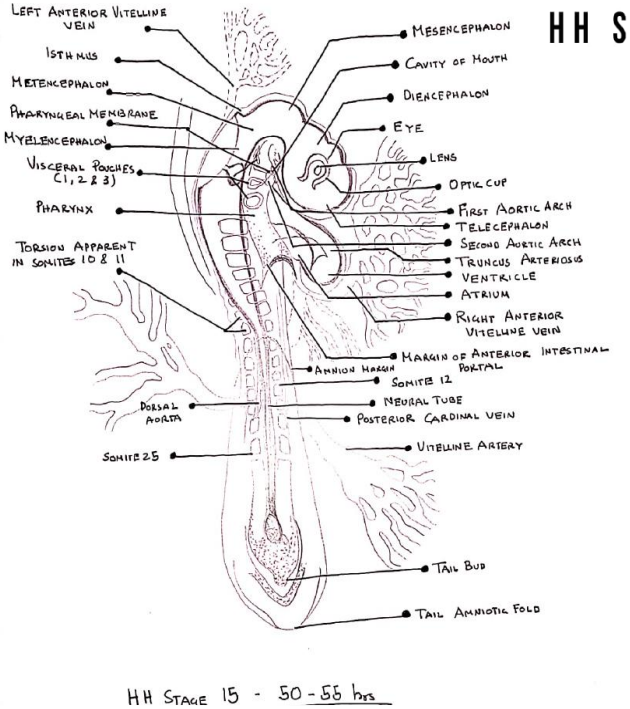
Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
33-38 h	10	15c	10 somites and 3 primary brain vesicles	3 primary brain vesicles (forebrain, midbrain, water chestnut brain); the anterior neural foramen has not been closed yet; the straight cardiac tube.	The right groove fold becomes more flat, but the left groove fold deepens.



The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
45-49 h	12	16b	16 somites and fore-brain vesicle	The embryo begins to turn back; the heart protrudes toward right further.	The primitive atrium appears

HH STAGE 15(25 PAIR OF SOMITE)
50-55 HRS



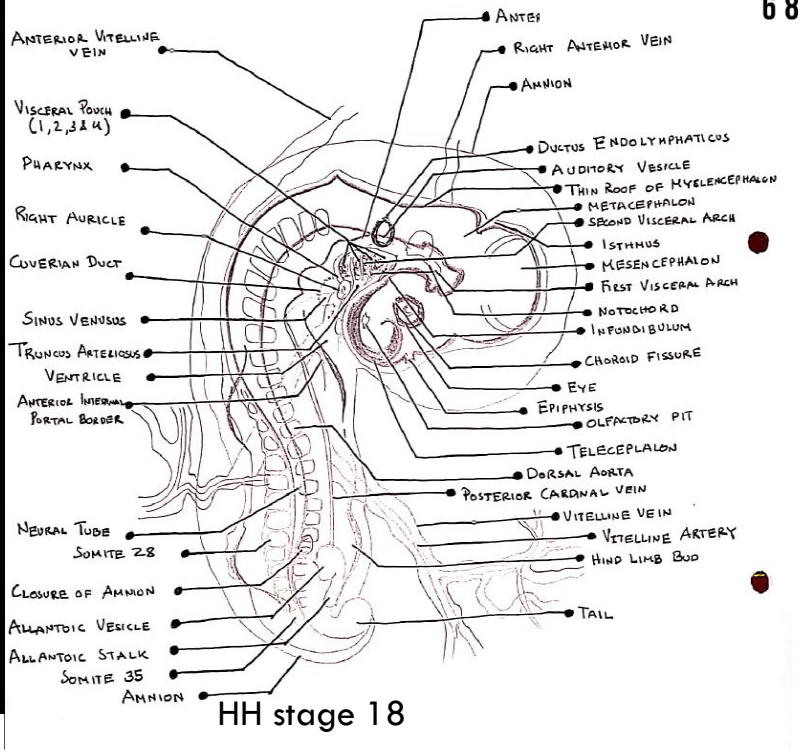
HH STAGE 15 - 50-55 hrs

Table 1: The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
50-55 h	15	17d	24-27 somites, the gill arch III and gill slits 3	The brain bends to nearly overlapping, taking the midbrain as the axis and bends to nearly overlapping. Taking the midbrain as the axis, the brain folds to nearly overlapping; the upper edge of brain becomes vertical; the anterior forebrain is close to heart; the body curves a little and its outline shapes like an arc; the edge of amniotic fold is located at the middle poison of embryo, which is between the two levels of anterior intestinal porta and omphalomesenteric artery.	

HH STAGE 18 35 PAIR OF SOMITE)

68-72 HRS

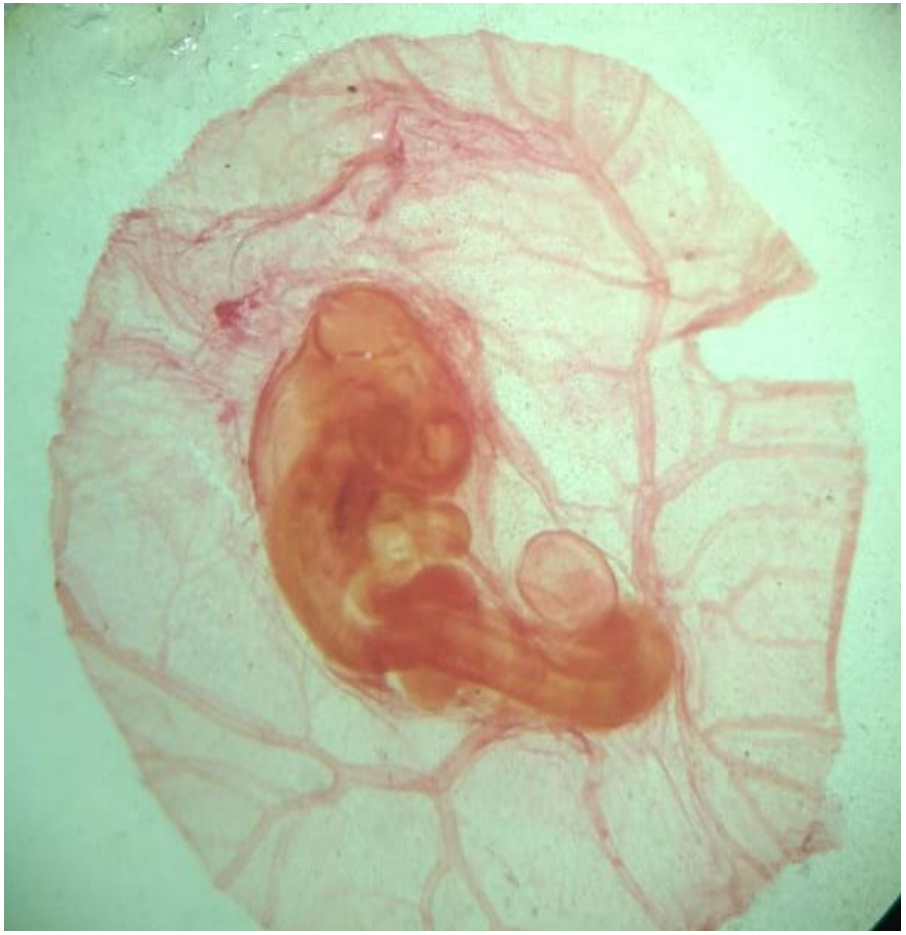


HH stage 18

Table 1: The morphology standard of the developmental stages of chick embryo

Incubation	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
3d	18	20	30-36 somites; the somites extend downwards and over the position of the leg bud; the allantois takes shape.	The edge of amniotic fold merges into a hole at caudal end; the back flexure shapes as 90 degree.	The position where the primitive ventricle is crooked moves from lying in the rostral end of the atrium to the caudal end of the atrium finally; this course is finished at HH18; during this stage, the position of left and right atriums and primitive ventricle curve changes greatly and gets close to their destined position; the left groove of the primitive atrium disappears at final stage.

HH STAGE 22
96 HRS



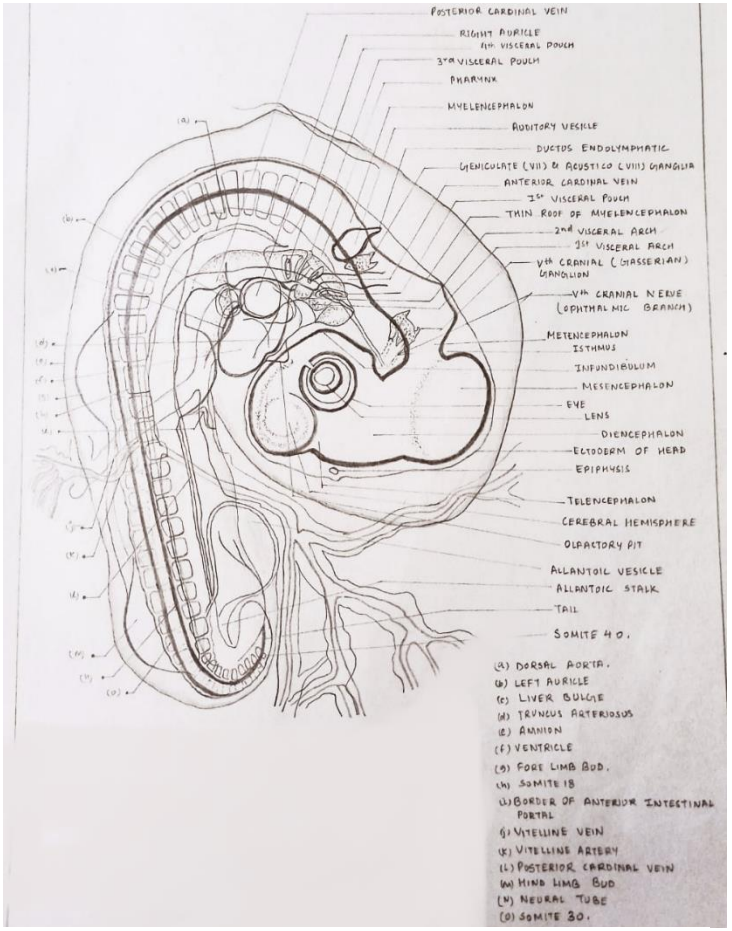


Table 1: The morphology standard of the developmental stages of chick embryo

Incubation hours	HH stage	Witschi stage	Characteristics determined by HH	Morphologic point of embryonic development observed by this study	Morphologic point of embryonic heart development observed by this study
3.5-4.0 d	22	24	The somites extend to caudal end.	The allantois volume continues to increase; the fore- and hind-limb buds continues to grow and the fore-limb bud is club-shaped; the embryo curves further, so that the rostral and caudal ends get closer.	