

Figure 38.4 The ventral side of a sheep heart.



Figure 38.5 The dorsal side of a sheep heart.



PROCEDURE B—DISSECTION OF A SHEEP HEART

1. Obtain a preserved sheep heart. Rinse it in water thoroughly to remove as much of the preservative as possible. Also run water into the large blood vessels to force any blood clots out of the heart chambers.
2. Place the heart in a dissecting tray with its ventral side up (fig. 38.4) and proceed as follows:
 - a. Although the relatively thick *parietal pericardium* is probably missing, look for traces of this membrane around the origins of the large blood vessels.
 - b. Locate the *visceral pericardium*, which appears as a thin, transparent layer on the surface of the heart. Use a scalpel to remove a portion of this layer and expose the *myocardium* beneath. Also note the abundance of fat along the paths of various blood vessels. This adipose tissue occurs in the loose connective tissue that underlies the visceral pericardium.
 - c. Identify the following:
 - right atrium
 - right ventricle
 - left atrium
 - left ventricle
 - coronary arteries
3. Examine the dorsal surface of the heart (fig. 38.5). Locate the stumps of two relatively thin-walled blood vessels that enter the right atrium and demonstrate this connection by passing a slender probe through them. The upper vessel is the *superior vena cava* and the lower one is the *inferior vena cava*.
4. To open the right atrium:
 - a. Insert a blade of the scissors into the superior vena cava and cut downward through the atrial wall (fig. 38.6).
 - b. Open the chamber, locate the *tricuspid valve*, and examine its leaflets.
 - c. Also locate the opening to the *coronary sinus* between the valve and the inferior vena cava.
 - d. Run some water through the tricuspid valve to fill the chamber of the right ventricle.
 - e. Squeeze the ventricles gently and watch the leaflets of the valve as the water moves up against them.
5. To open the right ventricle:
 - a. Continue cutting downward through the tricuspid valve and the right ventricular wall until you reach the apex of the heart.
 - b. Locate the *chordae tendineae* and the *papillary muscles*.

Figure 38.6 To open the right atrium, insert a blade of the scissors into the superior vena cava and cut downward.



- c. Find the opening to the *pulmonary trunk* and use the scissors to cut upward through the wall of the right ventricle. Follow the pulmonary trunk until you have exposed the *pulmonary valve*.
- d. Examine the valve and its cusps.

6. To open the left side of the heart:
 - a. Insert the blade of the scissors through the wall of the left atrium and cut downward to the apex of the heart.
 - b. Open the left atrium and locate the four openings of the *pulmonary veins*. Pass a slender probe through each opening and locate the stump of its vessel.
 - c. Examine the *bicuspid valve* and its leaflets.
 - d. Also examine the left ventricle and compare the thickness of its wall with that of the right ventricle.
7. Locate the aorta, which leads away from the left ventricle and:
 - a. Compare the thickness of the aortic wall with that of the pulmonary trunk.
 - b. Use scissors to cut along the length of the aorta to expose the *aortic valve* at its base.
 - c. Examine the cusps of the valve and locate the openings of the *coronary arteries* just distal to them.
8. As a review, locate and identify the stumps of each of the major blood vessels associated with the heart.
9. Discard the specimen as directed by the laboratory instructor.
10. Complete part B of the laboratory report.