LIST OF ILLUSTRATIONS.

Fig. 1. Diagram of the dissection of the fish, *Ophicephalus punctatus*, illustrating the parasympathetic contribution to the extrinsic innervation of the vascular structures in the thorax of the fish.

Fig. 2. Diagram of the section of the fish, *Ophicephalus*, illustrating the diffused nature of the sympathetic ganglia, situated on the dorsolateral sides of the gut.

Fig. 3. Diagram of the section of the fish, *Ophicephalus*, illustrating the inferior ganglion of the vagus and the bifurcation of the nerve soon after its emergence from the cranium.

Fig. 4. Diagram of the transverse section of the fish, *Ophicephalus*, showing the branching system of the vagus nerve in association with the branchial blood vessels.

Fig. 5. Diagram of the transverse section of the fish, *Ophicephalus*, illustrating the vagal cardiac nerve which runs between the gut and the Cuvierian duct, after having received a branch from the adjacent sympathetic ganglion.
Fig. 6. Diagram of the transverse section of the fish, Ophicephalus punctatus illustrating a bundle of nerve fibres on the surface of the duct of Cuvier.

Fig. 7. Diagram of the section of the heart of Ophicephalus illustrating the nerve fibres in the wall of the sinus venosus as well as in the sinuatrial node.

Fig. 8. Diagram of the section of the heart of Ophicephalus illustrating the nerve cells and nerve fibres in the ostial region.

Fig. 9a. Photomicrograph of the section of the heart of Ophicephalus showing the nerve plexus in the wall of the atrium.

Fig. 9b. Photomicrograph of the section of the heart of Ophicephalus showing the nerve plexus in the wall of the atrium.

Fig. 10. Photomicrograph of the section of the heart of Ophicephalus showing several nerve fibres entering the wall of the atrium through the A-V sulcus.

Fig. 11. Photomicrograph of the section of the heart of Ophicephalus illustrating the bundles of nerve fibres along with the blood vessels in the atrioventricular sulcus.
Fig. 12. Photomicrograph of the section of the heart of *Ophicephalus* illustrating the sub-epicardial nerve plexus in the wall of the ventricle.

Fig. 13. Photomicrograph of the section of the heart of *Ophicephalus* illustrating tortuous fibrils, which spread on to and wrap themselves around the muscle bands of the ventricular myocardium.

Fig. 14. Photomicrograph of the section of the heart of *Ophicephalus* illustrating the nerve fibres and nerve cells in the sinuatrial node.

Fig. 15. Diagram of the section of the fish embryo, passing through the heart, showing the specialized cells and nerve fibres in the A-V node area at the atrioventricular junction.

Fig. 16. Diagram of the section of the heart of *Ophicephalus* illustrating a bundle of nerve fibres which enters the A-V node area along with a coronary blood vessel. Nerve fibres are also seen scattered in this area.

Fig. 17. Diagram of the section of the heart of *Ophicephalus* illustrating a bundle of nerve fibres in close association with the coronary blood vessel in the wall of the bulbus aorta.
Fig. 18. Photomicrograph of the section of the heart of *Ophicephalus* illustrating a bipolar nerve cell in the atrioventricular sulcus near the ostial region.

Fig. 19. Diagram of the section of the heart of *Ophicephalus* illustrating the nerve elements at the ventriculo-bulbar junction.

Fig. 20. Photomicrograph of the section of the heart of *Ophicephalus* illustrating bundles of nerve fibres in the tissue atrioventriculo-bulbar junction.

Fig. 21. Photomicrograph of the section of the heart of *Ophicephalus* illustrating a bifurcating nerve at the ventriculo-bulbar junction.

Fig. 22. Diagram of the transverse section of the fish, *Ophicephalus*, to show the Glossopharyngeal nerve, which innervates the blood vessels of the first gill.

Fig. 23. Photomicrograph of the transverse section of the fish, *Ophicephalus* showing the intricate network of nerve fibres in the gill.
Fig. 24. Diagram of the dissection of the toad, Bufo melanosticus, illustrating the sympathetic and the parasympathetic contribution to the extrinsic innervation of the cardio-vascular structures, present in the thorax.

Fig. 25. Diagramatic representation of the sympathetic and parasympathetic contribution to the extrinsic innervation of the cardio-vascular structures, present in the thorax of the toad, Bufo melanosticus, based on the study of the serial transverse sections of the young toads.

Fig. 26. Diagram of the section of the young toad, passing through the heart, illustrating the cardiac plexus on the dorsal side of the atrium just anterior to the sinusatrial junction.

Fig. 27. Diagram of the section of the young toad, passing through the heart, showing a bundle of nerve fibres, which arises from the nervous centre near the S-A node and runs on the wall of the sinus venosus to reach the cephalic end of the interatrial septum.

Fig. 28. Photomicrograph of the section of the heart of toad, illustrating a ganglionic mass in the
pericardium at the cephalic end of the right atrium.

Fig. 29. Photomicrograph of the section of the heart of toad, illustrating a nerve plexus in the epicardial region of the atrium. The nerve fibres extend also in the underlying myocardium.

Fig. 30. Photomicrograph of the section of the heart of toad, illustrating a complex network of nerve fibres in the wall of the left atrium near the atrioventricular sulcus.

Fig. 31. Photomicrograph of the section of the heart of toad to show the beaded nature of the nerve fibres in the atrial wall.

Fig. 32. Diagram of the section of the heart of toad, illustrating a ganglion, just anterior to the cephalic end of the interatrial septum, corresponding with the Ludwig's ganglion of frog.

Fig. 33. Photomicrograph of the section of the heart of toad, illustrating a nerve and a ganglion in the middle of the interatrial septum, corresponding with the Remak's ganglion of frog.

Fig. 34. Photomicrograph of the section of the heart of toad, illustrating a ganglion, which corresponds
with the Bidder's ganglion of frog, at the caudal end of the interatrial septum. A bundle of nerve fibres extends into the substance of the left atrioventricular valve.

Fig. 35. Photomicrograph of the section of the heart of toad, illustrating a bundle of nerve fibres in the right A-V valve.

Fig. 36. Photomicrograph of the section of the heart of toad illustrating a bundle of nerve fibres in the atrioventricular valve.

Fig. 37. Diagram of the section of the heart of toad illustrating the ganglionic masses, one on either side of the atrioventricular plug.

Fig. 38. Photomicrograph of the section of the heart of toad illustrating the detailed structure of the ganglionic mass, present near the A-V plug.

Fig. 39. Photomicrograph of the section of the heart of toad illustrating the sensory nerve end-rings in the epicardial plexus of the ventricle.

Fig. 40. Photomicrograph of the section of the heart of toad illustrating a nerve plexus in the ventricular epicardium, wherefrom nerve fibres extend into the underlying myocardium.
Fig. 41. Diagram of the section of the heart of toad illustrating the nerve fibres in the endocardium and extending into the myocardium of the ventricle.

Fig. 42. Photomicrograph of the section of the heart of toad illustrating a large number of nerve fibres in the myocardium, which reach there from the atrioventricular sulcus.

Fig. 43. Photomicrograph of the section of the heart of toad illustrating the sinuous fibres, singly and in fascicles, which extend between the bands of the myocardium in ventricle.

Fig. 44. Photomicrograph of the section of the heart of toad illustrating the endocardial plexus in the ventricle, wherefrom the nerve fibres extend into the adjacent myocardium.

Fig. 45a. Photomicrograph of the section of the heart of toad illustrating the beaded nerve fibres in the muscle bands of the myocardium in the ventral wall of the ventricle.

Fig. 45b. Photomicrograph of the section of the heart of toad illustrating the beaded nature of the nerve fibres in the myocardium of dorsal wall of ventric
Fig. 46. Photomicrograph of the section of the heart of toad illustrating the simple nerve-endings in the myocardium of the ventricle.

Fig. 47. Photomicrograph of the section of the heart of toad illustrating the Perimysial plexus in the myocardium of the ventricle. The fibrils end in the form of knob-like structures.

Fig. 48a. Diagram of the section of the heart of toad illustrating the nerve elements in the ventriculo-bulbar bundle.

Fig. 48b. Photomicrograph of the section of the heart of toad illustrating the nerve elements in close association with the ventriculo-bulbar bundle.

Fig. 49. Photomicrograph of the section of the heart of toad illustrating the nerve fibres in the form of a bundle in the atrioventricular sulcus, along with a coronary blood vessel.

Fig. 50. Photomicrograph of the section of the heart of toad illustrating a multipolar nerve cell in the atrial wall, near the atrioventricular junction.

Fig. 51. Photomicrograph of the section of the heart of toad illustrating the bipolar nerve cell in the myocardium of the ventricle.
Fig. 52. Photomicrograph of the section of the heart of toad illustrating the nerve fibres, which extend from the epicardial plexus of the ventricle into the wall of the truncus arteriosus to innervate its muscles.

Fig. 53. Photomicrograph of the section of the heart of toad illustrating the profuse innervation of the junctional tissue between the ventricle and the truncus arteriosus.

Fig. 54. Photomicrograph of the section of the heart of toad illustrating the nerve plexus in the subepithelial as well as in the sub-endothelial region of the truncus arteriosus.

Fig. 55. Photomicrograph of the section of the heart of toad illustrating numerous nerve fibres, which form a sort of plexus in the media of the truncus arteriosus.

Fig. 56. Photomicrograph of the section of the heart of toad showing the nerve fibres in the adventitia of an arterial trunk and extending into its media.
Fig. 57. Photomicrograph of the section of an arterial trunk to show the nerve complex within its wall. Tortuous fibrils spread onto and wrap themselves around the muscle bands.

Fig. 58. Diagram of the dissection of *Calotes calotes* to illustrate the contribution of the sympathetic and the parasympathetic systems to the extrinsic innervation of the cardio-vascular structures, present in the thoracic region.

Fig. 59. Diagramatic representation of the contribution of the sympathetic and the parasympathetic systems to the extrinsic innervation of the cardio-vascular structures, based on the study of the serial transverse sections of the entire animal (*Calotes calotes*) passing through the cephalic, cervical and the thoracic regions.

Fig. 60. Photomicrograph of the transverse section of the entire animal showing the nerve elements of sympathetic and parasympathetic origin in the median portion of the cardiac plexus near the point of bifurcation of the trachea.
Fig. 61. Photomicrograph of the section of the heart of *Calotes* illustrating nerve elements in the wall of the sinus venosus as well as in the S-A node.

Fig. 62. Photomicrograph of the section of the heart of *Calotes* illustrating the neuromuscular bundle and the nerve elements which extend from there to the adjacent atrial wall.

Fig. 63a. Diagram of the section of the entire animal (*Calotes*) to show a nerve, which arises from a ganglionic mass and enters the wall of the left atrium to form the sub-epicardial plexus.

Fig. 63b. Photomicrograph of the transverse section of the entire animal, passing through the heart, illustrating the sub-epicardial plexus in the atrial wall.

Fig. 64. Diagram of the section of the heart of *Calotes* illustrating ganglion cells and nerve fibres, single and in bundle, in the atrioventricular sulcus.

Fig. 65. Diagram of the section of the heart of *Calotes* illustrating beaded nerve fibres, which arise from the sinuventricular bundle and enter the wall of the ventricle.
Fig. 66. Photomicrograph of the section of the heart of *Calotes* illustrating a neuromuscular structure, just below the posterior extension of the sinus venosus.

Fig. 67. Diagram of the section of the heart of *Calotes* illustrating the neuromuscular bundle and its two branches, the right and the left.

Fig. 68. Diagram of the section of the visceral organs of *Calotes* showing ganglion cells, parasympathetic ganglion and nerve fibres in close association with the arterial trunks.

Fig. 69. Diagram of the section of the visceral organs of *Calotes* illustrating the nerve elements of sympathetic and parasympathetic origin in close proximity to the pulmonary blood vessels.

Fig. 70. Diagram of the coronal section of the visceral organs of *Calotes* illustrating the sympathetic and the parasympathetic nerve elements beside the blood vessels, which run along with the tracheas.

Fig. 71. Diagram of the dissection of house-swift to show sympathetic and parasympathetic contribution to the extrinsic innervation of the vascular structures, present in the thoracic region.
Fig. 72. Photomicrograph of the section of the heart of Macropus illustrating the sinuous fibres, which extend from the epicardial nerve plexus over the myocardial muscle bands in the atrial wall.

Fig. 73. Photomicrograph of the section of the heart of Macropus illustrating the endocardial nerve plexus in the atrial wall.

Fig. 74. Photomicrograph of the section of the heart of Macropus illustrating nerve cells, nerve fibres ganglia along with the blood vessels in the atrioventricular sulcus.

Fig. 75. Photomicrograph of the section of the heart of Macropus illustrating bundles of nerve fibres, which extend from the atrial wall to the ventricular wall.

Fig. 76. Photomicrograph of the section of the heart of Macropus illustrating a bundle of nerve fibres in the atrioventricular sulcus, sending nerve fibres to the muscle bands of the ventricle.

Fig. 77. Photomicrograph of the section of the heart of Macropus illustrating a nerve, which arises from a ganglion and enters directly into the wall of the ventricle to innervate the epicardium and myocardium.
Fig. 78. Photomicrograph of the section of the heart of *Macropus* illustrating the fasicles of sinuous fibres and the tortuous fibrils in the myocardium of the ventricle.

Fig. 79. Photomicrograph of the section of the heart of *Macropus* illustrating a terminal nerve plexus, in the left ventricle.

Fig. 80. Photomicrograph of the section of the heart of *Macropus* illustrating a nerve plexus (terminal) in the myocardium of the right ventricle.

Fig. 81. Photomicrograph of the section of the heart of *Macropus* illustrating the perimysial plexus in the myocardium of the ventricle. The fibrils spread on the muscle bands as well as on the wall of the coronary blood vessel.

Fig. 82. Photomicrograph of the section of the heart of *Macropus* illustrating the sub-endocardial plexus, from where the nerve fibres extend into the myocardium.

Fig. 83. Photomicrograph of the section of the heart of *Macropus* illustrating a bundle of nerve fibres, which runs on the outer margin of the interventricular septum and sends nerve fibres to the muscle bands of the septum.
Fig. 84. Photomicrograph of the section of the heart of *Macropus* illustrating large number of nerve fibres which extend over the wall of the coronary blood vessel in the interventricular septum.

Fig. 85. Photomicrograph of the section of the heart of *Macropus* illustrating a bundle of nerve fibres, which surrounds the conducting tissue at the atrioventricular junction and then runs into the substance of the atrioventricular valve.

Fig. 86. Photomicrograph of the section of the heart of *Macropus* illustrating numerous nerve fibres at the base of the right atrioventricular valve.

Fig. 87. Photomicrograph of the section of the heart of *Macropus* illustrating nerve fibres and neurofibrillae in the middle portion of the right atrioventricular valve.

Fig. 88. Photomicrograph of the section of the heart of *Macropus* illustrating the nerve fibres, which run in between the muscle bands, almost parallel to them, in the atrioventricular valve.

Fig. 89. Photomicrograph of the section of the heart of *Macropus* illustrating the sinuous fibres in the basal portion of the mitral valve.
Fig. 90. Photomicrograph of the section of the heart of *Macropus* illustrating a nerve plexus on the wall of the coronary blood vessel, wherefrom some nerve fibres extend into the surrounding myocardium.

Fig. 91. Photomicrograph of the section of the heart of *Macropus* illustrating a nerve plexus on the wall of the coronary blood vessel in the interventricular muscle cone.

Fig. 92. Diagram of the section of the heart of *Macropus* illustrating a ganglion, a bundle of nerve fibres and some scattered nerve fibres in close association with the arterial blood vessels near the heart.

Fig. 93. Photomicrograph of the section of the heart of *Macropus* illustrating nerve fibres at the openings of the vena cavae.

Fig. 94. Diagram of the dissection of shrew illustrating the sympathetic and the parasympathetic contribution to the extrinsic innervation of the cardiovascular structures, present in the thoracic region.

Fig. 95. Diagramatic representation of the sympathetic and parasympathetic contribution to the extrinsic innervation of the cardio-vascular structures, based on the study of the serial T.S. of faetal shrew
Fig. 96. Photomicrograph of the section of the heart of shrew illustrating a nerve trunk, which runs through the fibrous tissue of the pericardium to reach the cardiac muscles of the heart.

Fig. 97. Diagram of the section of the heart of shrew illustrating nerve branches in the atrial and ventricular walls.

Fig. 98. Diagram of the section of the heart of shrew illustrating a ganglionic mass between the atrial wall and the arterial trunk. A prominent nerve arises from this mass and innervates the adjacent structures.

Fig. 99. Diagram of the section of the heart of shrew illustrating a ganglionic mass, with a large number of ganglionic cells, and bundles of nerve fibres along with the blood vessels in the atrio-ventricular groove.

Fig. 100. Diagram of the transverse section of the faetal shrew illustrating a parasympathetic ganglion in the pericardium, at the cephalic end of the right atrium.

Fig. 101. Photomicrograph of the section of the heart of shrew (faetal), illustrating ganglion cells and
nerve fibres in the tissue lying between the two atria of the heart.

Fig. 102. Diagram of the transverse section of the faetal shrew illustrating a continuous pathway of nerve elements in the interatrial tissue of the heart.

Fig. 103. Photomicrograph of the section of the heart of shrew illustrating nerve elements in the left limb of the atrio-ventricular valve.

Fig. 104. Diagram of the section of the heart of shrew illustrating nerve elements in the atrioventricular valve as well as in the wall of the coronary blood vessel, present in the ventricular wall.

Fig. 105. Photomicrograph of the section of the heart of shrew illustrating nerve cells and nerve fibres in the right limb of the left A-V valve.

Fig. 106. Diagram of the section of the heart of shrew illustrating an intrinsic ganglion in the endocardium of the ventricular wall and some nerve fibres extending from it into the endocardium and myocardium.

Fig. 107. Diagram of the section of the faetal shrew, passing through the heart, to illustrate nerve fibres in the endocardium of the ventricle, and a beaded
nerve fibre in the myocardium of the ventricle. Nerve fibres are also seen to stretch over the wall of the coronary blood vessel.

Fig. 108. Diagram of the section of the heart of shrew illustrating a bipolar nerve cell and the perimysial plexus in the muscle tissue of the interventricular septum.

Fig. 109. Diagram of the section of the heart of shrew illustrating the A-V node, the nodal artery and the nodal ganglion at the A-V junction. Nerve fibres are also seen in the A-V valve.

Fig. 110. Diagram of the section of the faetal shrew, passing through the heart, illustrating nerve elements in the surrounding tissue of the A-V node.

Fig. 111. Diagram of the section of the heart of shrew illustrating an extrinsic parasympathetic ganglion and a bundle of sympathetic nerve fibres between the major blood vessels, just anterior to the atria.

Fig. 112. Diagram of the section of the faetal shrew illustrating the sympathetic and parasympathetic nerve elements in very close association to the pulmonary vein.