

**SURGICAL AND
OBSTETRICAL OPERATIONS,
FOR VETERINARY STUDENTS
AND PRACTITIONERS**

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Surgical and obstetrical operations, for veterinary students and practitioners by W. L. Williams

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FOR

Veterinary Students and Practitioners

BY

W. L. WILLIAMS

Professor of Obstetrics and Surgery in the New York State Veterinary
College, Cornell University.

Embodying portions of the OPERATIONSKURSUS of Dr. W. Pfeiffer,
Professor of Veterinary Science in the University of Giessen.



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ITHACA, N. Y.

PREFACE.

The author caused to be published in 1900 a booklet entitled: "A Course in Surgical Operations by W. Pfeiffer and W. L. Williams," consisting of an authorized translation of Dr. Pfeiffer's Operations-Cursus with such changes, omissions and additions as were deemed desirable. Three years of constant use, with such criticisms as have come to the author from others, have served to point out desirable changes of so sweeping a character as to demand a practically new treatise and to render the continuance of a formal joint authorship inexpedient. The author has drawn freely upon Dr. Pfeiffer's Operations-Cursus in the preparation of the text which in many chapters is practically copied therefrom, including the illustrations, and gratefully acknowledges his profound obligations thereto. On the other hand nothing has been copied or extracted except it could be freely adopted as the author's own view, releasing Dr. Pfeiffer from all responsibility for the character of any of the contents.

The volume is primarily designed for the use of the author's classes in laboratory surgery and embryotomy in which the student performs the surgical operations described, on animals procured for the express purpose, under chloroform anaesthesia whenever possible, after which the subject is destroyed while still anaesthetized; at the same time it has been aimed to render the volume of the greatest possible value to the practitioner consistent with this plan. The operations included under this scheme are necessarily limited to those which can be reasonably well performed on comparatively sound animals of little value and regularly procurable for laboratory purposes. The list covers a wide range and is designed to give to the student as thorough training as is practicable in a laboratory course and includes well nigh all the more important varieties of confinement, anaesthesia, disinfection, sutures, bandaging, dressing and other adjuncts to operative work. The chapter on trephin-

ing of the facial sinuses has been dealt with at length in order to fully and clearly describe the author's method of operating; a new operation for poll evil has been inserted and there has been included a description of some of the most important embryotomy operations as they are carried out in the laboratory by means of freshly killed, new-born calves which are placed in the position desired, in the artificial uterus of a specially prepared skeleton.

Generally but one method of operating is described, the one chosen being that which in the author's experience has proven the most valuable in actual practice, and no operation has been introduced purely for practice but each one has been tested and known to have practical value.

Where two methods of operating are given, they are inserted because each has definite points of superiority over the other and one method may be specially applicable in a given case, another in a different patient where the same operation is to be performed as for example, a milk cow is best spayed through the vagina while a heifer must be operated on by an incision through the abdominal walls.

Considerable stress has been laid upon the surgical anatomy of the parts involved in each operation; some uses of the various operations are mentioned; some of the chief dangers of each are pointed out and in some cases references to literature upon the operation or the diseases for which the operation is designed, are cited.

The figures in the text except Nos. 5, 10 and 11, and the Plates Nos. I, II, VIII, X, XII, XIV, XVII, XVIII, XXI, XXII, XXIII, XXV, XXVIII and XXIX are from Dr. Pfeiffer's *Operations-Cursus*; Plate No. III was drawn by Dr. C. F. Flocken, Bureau of Animal Industry, Washington, D. C., and the remaining Plates were drawn under the direction of the author by Mr. C. W. Furlong, Instructor in Industrial Drawing and Art in Sibley College, Cornell University.

W. L. WILLIAMS.

Cornell University, October, 1903.

CONTENTS.

I.

I. OPERATIONS ON THE HEAD :

	Page.
1. Extraction of Teeth	1
2. Repulsion of Teeth	11
Trepining the Facial Sinuses	18
3. Trepining of the Frontal Sinuses	21
4. Trepining the Maxillary Sinuses	33
5. Trepining the Nasal Fossae	36
6. Poll Evil Operation	37
7. Ligation of the Parotid Duct ✓	41
8. Entropium Operation	46
9. Staphylotomy	47
10. Trifacial Neurotomy ✓	48

II. OPERATIONS ON THE NECK :

11. Opening the Guttural Pouches	53
12. Tracheotomy ✓	59
13. Arytenectomy ✓	61
14. Intra-tracheal Irrigation ✓	66
15. Intravenous Injection ✓	67
16. a. Phlebotomy with Fleams	69
b. Phlebotomy with Lancet	70
c. Phlebotomy with Trocar	71
17. Ligation of the Carotid Artery ✓	71
18. Oesophagotomy	76

III. OPERATIONS ON THE TRUNK AND ON THE GENITAL ORGANS :

19. Puncture of the Chest	78
20. Puncture of the Intestine	79
21. Subcutaneous Caudal Myotomy	81
22. Caudal Myectomy for Gripping of the Reins ✓	83
23. Amputation of the Tail	88
24. Urethrotomy	90
25. Amputation of the Penis	93
26. Vaginal Ovariectomy in the Mare	97
27. Vaginal Ovariectomy in the Cow ✓	107
28. Ovariectomy in the Cow by the Flank ✓	109

29. Ovariectomy in the Bitch by the Flank ✓	110
30. Ovariectomy in the Bitch by the Linea Alba	117
31. Ovariectomy in the Cat ✓	118

IV. OPERATIONS ON THE EXTREMITIES :

† 32. Tenotomy of the Flexor Tendons of the Foot ✓	119
33. Tenotomy of the Peroneal Tendon (Stringhalt Operation)	121
∩ 34. Tenotomy of the Cunean Tendon (Spavin Operation)	125
Neurotomy	129
35. Digital Neurotomy	132
36. Plantar Neurotomy ✓	137
37. Median Neurotomy	141
38. Ulnar Neurotomy	147
39. Sciatic Neurotomy ✓	153
40. Anterior Tibial Neurotomy	163
41. Resection of the Lateral Cartilages ✓	165
42. Resection of the Flexor Pedis Tendon ✓	172
43. Amputation of the Claws of Ruminants ✓	174
44. Bayer's Sutures	179

II.

EMBRYOTOMY OPERATIONS :

45. Cephalotomy ✓	183
46. Decapitation ✓	185
47. Subcutaneous Amputation of Anterior Limb ✓	185
48. Amputation at the Humero-radial Articulation ✓	187
49. Detruncation ✓	188
50. Destruction of the Pelvic Girdle, Anterior Presentation ✓	192
51. Amputation of the Limbs at the Tarsus ✓	196
52. Intra-pelvic Amputation of the Posterior Limbs, Breech Presentation ✓	200
53. Evisceration of the Fetus ✓	209

INTRODUCTION.

Many details must be omitted in the succeeding text which are of importance in each operation, but which, if inserted, would render the volume unwieldy in size for the purpose designed.

These details are in a measure alike in each case, and it is assumed that the student has already familiarized himself with them. The more important of these may be summarized as follows :

1. The subject should be securely confined in each case as directed, because the method designated has been found effective in the operation under description, and serves to fix the relations of the parts in such a way as to conform to the surgical anatomy of the region as outlined in the text. It is to be constantly borne in mind that a change in the attitude of the animal is capable of causing profound alterations in the relations of parts which may greatly embarrass the operator, or even prevent his carrying out the operation according to the technic given. In securing an animal for operation we must confine the whole body in a way that will sufficiently control movements and will insure safety to the patient and operator ; the part to be operated upon must be so fixed as to properly limit its motion and in a position to afford the greatest facility for the carrying out of the operation according to the best technic known.

2. Anaesthesia should be carefully carried out everywhere possible, because in addition to the humane sentiments involved, the resulting perfect control of the animal is an essential in aseptic or antiseptic surgery. The student should make a careful study of anaesthesia in these exercises and acquire invaluable experience and confidence for use in actual practice.

3. Disinfection must be scrupulously applied in every detail since upon its effectiveness must hang the verdict of

success or failure as measured by modern surgical knowledge. The operator's hands and, if need be, his arms should be thoroughly scrubbed with a stiff brush in hot water with soap for a period of fifteen minutes, the finger nails well trimmed and cleansed, and all dirt and old epidermal scales removed. The parts may then be disinfected by immersing in a hot concentrated solution of permanganate of potassium for ten minutes and then decolorized in a strong solution of oxalic acid in sterile water. Or the hands may be disinfected after the washing with soap and water by immersing and scrubbing them for ten minutes in a 1 to 1000 solution of corrosive sublimate, but in order to make this thoroughly effective the solution needs be alcoholic, or the hands should first be immersed in alcohol, ether, or other substance capable of dissolving fats and permitting the disinfectant to penetrate the sebaceous glands. Great care should be exercised by the student to not touch any object after the hands have been disinfected for the operation unless it has been disinfected or sterilized, or in case it becomes necessary to touch objects not sterile, the disinfecting process should be repeated before proceeding further with the operation. This constitutes one of the most difficult of all details for the beginner to acquire, and each failure should be remedied by repeating the disinfection over and over until the habit of maintaining effectual sterilization is acquired and fixed.

The operation field should always be carefully shaved before beginning the operation, and the shaved area should always be very ample, so as to insure against contamination from adjacent hairs, as well as to give a clear view of the field. The area should then be disinfected in a reliable manner, that advised for the operator's hands serving as a type. Whenever circumstances will permit the operation field should be kept in an antiseptic bath or pack for twenty-four hours prior to the operation in order that the deeper parts of the skin, especially the hair follicles and sebaceous