On sterility in the male and female : its causes and treatment / By the Chevalier V. Mondat ... Tr. from the 5th French ed.

ON

STERILITY

IN THE

MALE AND FEMALE,

ITS

CAUSES AND TREATMENT.

BY THE CHEVALIER V. MONDAT, D. M. P.,

PROFESSOR OF ANATOMY, AND DISEASES OF WOMEN AND CHILDREN—MEMBER OF THE ROYAL ACADEMY OF MEDICINE, ETC., ETC.

TRANSLATED FROM THE FIFTH FRENCH EDITION.

WITH FIFTY ILLUSTRATIONS.

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AMERICAN PREFACE.

No greater misfortune can, generally speaking, be entailed upon a married couple, than that of *Sterility*. The absence of offspring seems, at once, to defeat the ends and aim of the matrimonial compact, and often embitters a connection, which, if attended with a family of children, would be one of great happiness. The subject is a cause of constant and mutual recrimination between the husband and wife. Under these circumstances, the confidential medical adviser of the family is consulted; but as this is a subject to which little attention has usually been paid, and as there is no professional treatise upon it, but little light can be thrown by him upon the causes, nature, and treatment, of this malady.

Under these circumstances, it has been deemed expedient to publish a translation of the work of the distinguished Chevalier V. Mondat, who has received marks of distinction from several of the learned societies of France, as an extremely eminent and scientific practitioner; for the last twenty years, he has devoted the best energies of a highly cultivated mind

to deep research upon this obscure and difficult subject, and with immense success. His book has passed through *five* large editions; and the translation of it, now first presented to the medical profession, will justify any expectations which may have been formed in regard to its merits. It is, in fact, a complete work on Sterility, examined in all its bearings. It likewise introduces to the notice of the profession a new instrument, the *Congester*, which is founded on highly scientific principles, and has produced valuable results.

We bespeak for the book as favorable a reception in America, as it has received in France.

PREFACE

TO THE

FIFTH FRENCH EDITION.

The interest manifested by the public in the early editions of this work, and its unexpected success, have imposed new obligations on me. Medical science has advanced so rapidly, that I have made unusual efforts to bring this book up to the level of the present state of our knowledge, and to adduce, in this present edition, the results of my late observations, and of the remedies used in these latter times.

The additions and alterations made in this fifth edition, are to be found principally in the chapters devoted to the causes and treatment of sterility, more particularly in regard to the new instruments and medicines, which experience has proved to be very efficient in the treatment of this malady. The difficulties attending the subject leave much to be desired; but we have attempted to fulfil our task conscientiously, and, we hope, to the farther satisfaction of the public.

V. Mondat, D. M. P.

Paris, 1843.

LIST OF ILLUSTRATIONS.

INTRODUCTION.

The generation of men and animals, termed by the immortal Bichat the third life, or order of functions of our economy, is a phenomenon as great as that of the motions of the earth or stars; but every one is familiar with this prodigy of nature, and it does not astonish. And the growth of vegetation around us, and the perpetuity of the human species, are regarded in the same light. If men ardently desire to leave posterity after them, and to have children, they simply exercise the mysterious function of reproduction, and never seek to study the phenomena which have caused it.

Many naturalists, philosophers, and medical men, however, have examined with zeal and perseverance the process of generation. Time and reflection have brought to light many valuable physiological discoveries. The depths of nature have been to a certain degree sounded and explored: and now nearly the same is known of the important function of reproduction, as of the other physiological functions. The writings of Velpeau, and the learned and logical communications of Dr. Jolly, in his Dictionary of Medi-

cine, have thrown much light on this part of science; and I here return to them my sincere gratitude for the instruction and aid in preparing this, the fifth edition of my book.

Every animal receives with its existence the power of perpetuating its species; but many causes, arising from the conditions of the organization, or dependant on circumstances, may modify or change the laws which govern the different phenomena of reproduction. It seems that nature does not subject this important function to the intellectual powers. At least, this is the case in the human species, where although the congress of the sexes occurs at all periods and seasons, generation is less frequent, from the fact that it is more subject to social compacts and institutions. And perhaps the number of sterile marriages observed in the large cities may be referred to this cause, while the families of farmers increase rapidly. In the country, the secret dictates of the heart are followed without so much regard to interest; in the city, on the contrary, at least in the old world, most marriages are decided by ambition, the necessity of luxury, the equality of rank, fortune, and station.

We shall, however, content ourselves here with this simple remark as to the fact, and leave its consideration to moralists and statesmen, as Plutarch, Montesquieu, Buffon, Cuvier, &c. We shall point out particularly the causes of sterility, which belong especially to art. I allude to the different morbid circum-

stances which may exercise an influence on the phenomena of reproduction.

A function which transmits vitality must contain in itself the cause of its destruction: consequently the instruments intrusted with the perpetuation of the races and species, may become the necessary cause of their end. In other words, the causes of sterility, as of fecundity, are situated in the organs destined for this purpose. Hence it is important to study them in their anatomical and physiological conditions, to determine the part they exercise in the sexual relations, and that which they take in the accomplishment of generation. The acts which compose this function are so numerous and complex, that the great number of organs which contribute to it is not astonishing.

As the genital organs participate in the different diseases which affect the human species, they may be nullified by any morbid state, in the same manner as every other function may be suspended by the lesion of the organs which perform it. Nature, however, which seems to have enveloped the phenomenon of reproduction in the most obscure mystery, has thrown the same obscurity around the diseases of the genital system. It is, however, only by studying sterility in this point of view, that the physician can promise success in regard to his treatment. In fact, to point out its causes is to define an obstruction against which every effort of art strives in vain: it is to have taken the first and greatest step toward the cure. In thus

referring the etiology of sterility to sterility itself, we should be naturally led to speak of the remedy which each cause of barrenness, considered in detail, may require. It is only by adapting medication to the cause of the disease, that we can expect its cure: we must, however, admit the insufficiency of such a guide in many cases, where the diagnosis of sterility escapes the researches of the most attentive observer, and where experience alone can dictate the mode of treatment. As we can not ascertain the degree of disease in the organs, without a perfect knowledge of their healthy state, I shall glance rapidly at the anatomical and physiological history of the genital system. I have also thought proper to examine in this work, the different substances employed by art to remove this kind of sterility, which is attended with a marked diminution of the vital properties of the genital system; and also to mention some formulæ generally employed in my practice. I have also introduced drawings of several instruments, with a view to fix the neck of the uterus, when from any deviation it loses its natural relations with the vulvo-vaginal canal during the performance of the genital act; also, two new drawings, representing instruments to perfect the turgescence of the penis in the numerous cases where nature is insufficient to fulfil the function of coition; they develop the virile member, and render it large enough to fulfil the act of reproduction. They serve also to render the uterus hypertrophied, by developing

its tissues, and to restore or excite the menstrual discharge.

To avoid all confusion in the examination of the different subjects, I have thought proper to divide them into chapters, adopting in each the same physiological divisions. In the details, I have attempted to state, as briefly as possible, whatever of truth has been written on the subject; being careful to mention the precepts confirmed by experience, or generally admitted by the most trustworthy authorities. Hence, I have been able to enlarge the book by cases from the best authorities, or which have occurred in my own practice. Hitherto, the development of the penis has been regarded as beyond the resources of the art. Hypospadias and epispadias have been constantly regarded by authors as absolute causes of impotence. In a former edition, I have stated the success obtained in the first case by the remedies there indicated; and I have ventured to attack the latter disease, as will be seen in the proper place, by simple measures, by which many individuals have now become fathers, who were formerly regarded as incurable. I have demonstrated the existence of a membrane, termed the *membranous* uterine sac, which absolutely prevents fecundity. I have also avoided every digression from my proper subject. In fact, science does not consist in a vain show of hypotheses, nor in excessive erudition, but in the exposition of certain principles, and of facts strictly observed. I know the difficulty of treat-

ing a subject of such magnitude and obscurity; but having devoted myself, for many years, to diseases of females, and having heard of many complaints of sterile marriages, I have thought proper to continue to offer them the fruit of my meditations, and long and difficult researches on this subject.

I am aware that this kind of book is not apt to meet with favor, and the critic is disposed to review it with severity; but my object in writing it is the public good: and with this view, I say to my book, as Horace said to his:

Fuge quo discedere gestis...
Non erit emisso reditus tibi...

STERILITY

IN THE

MALE AND FEMALE, AND ITS CURE.

PART I.

CHAPTER I.

ANATOMICAL AND PHYSIOLOGICAL HISTORY OF THE GENITAL ORGANS, CONSIDERED IN BOTH SEXES.

This third life of our organization, depending on the other two has special distinctions and presents peculiar phenomena. No function of the economy requires the exercise of a greater number of organs than the generative. The instruments of this important function, which are arranged in a manner most favorable for the union of the sexes, notwithstanding their symmetrical and regular arrangement, are partly independent of the will. Hence they have been regarded by many physiologists (as Buffon, Bichat, &c.,) as having an existence independent of the rest of the individual, a vitality more limited than that of the other organs. The manner in which they contribute to this function forces us to distinguish them into 4 orders: 1. organs of *conjunction:* 2. organs of *secretion:* 3. organs of *emission:* 4. organs of *preservation.* This division could be modified, according to the sexes: but

we have thought proper to preserve it, so as not to interrupt the plan of the work, especially as the description of each organ is followed by that of its functions in the process of generation.

In order not to exceed our limits, we shall not consider the genital organs, till after the period of puberty, that is when they become ready for the process of generation.

GENITAL ORGANS IN THE MALE.

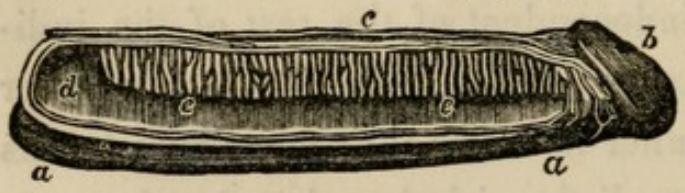
§ I.—ORGANS OF CONJUNCTION.

This order of organs is composed of the *penis* only.

Anatomical Arrangement.—Situated in front of the symphysis pubis, the penis is formed essentially of three parts, viz.: the *corpus cavernosum*, *glans*, and *urethra*.

1. The *corpus cavernosum* presents the form of an elongated tube, flattened from above downward, divided internally by a median septum, which has induced some anatomists to regard it as composed of two distinct parts. This is seen in fig. 1:

[Fig. 1.]



a. Urethric part of the penis.
b. Glans.
c. Dorsal vein.
d. The septum.

At its anterior extremity, where it unites with the glans, it is single, while it is bifurcated at its posterior extremity, for its double insertion in the rami of the ischium and pubis. It is formed of an external mem-

brane of a fibrous character, and of a spongy or cellular tissue, which constitutes its greater portion. Its organization seems to be a network of small fibrous layers, belonging to the external membrane, of arteries and veins, which admit more or less blood when the penis is erect, and probably of nervous filaments, which regulate the degree of nervous sensibility in the organ.

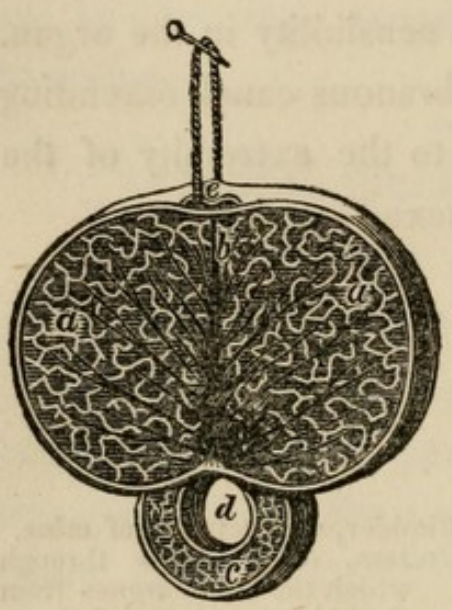
2. The *urethra* is a membranous canal extending from the neck of the bladder to the extremity of the penis, and is shown in the annexed cut (fig. 2):

[Fig. 2.]

a. Bladder, or receptacle of urine.
b. Ureters, or passages through which the urine comes from the kidneys, where it is formed, to the bladder.
c. Vas deferens, through which the semen passes from the testicle, where it is formed, to the seminal vesicles, where it is matured.
d. d. Openings of ureters into the bladder.
e. Prostate gland.
f. Orifices of excretory ducts.
g. Openings of the seminal ducts.
h. Ischio-cavernous muscles.
i. Bulb of urethra divided.
k. Cowper's glands.
l. Wide part of urethra.
m. Narrow part.
n. Fossa navicularis.
o. p. Prepuce.

It serves not only as the execretory passage for the semen and urine, but also assists in forming the structure. It is situated in the lower part of the penis, in a kind of groove formed by the corpus cavernosum, as shown in fig. 3.

[Fig. 3.]



a. Corpus cavernosum.
b. Division, or septum.
c. Corpus spongiosum.
d. Urethra.
e. Great vein of the penis.

It extends along the whole length of the penis, and then passes through the glans, terminating at its extremity. It presents, in different portions of its extent, a different kind of organization, and hence anatomists have divided it into two parts—a *membranous* and a *spongy* portion. The latter is the more extensive, and is very analogous in structure and vitality to the corpus cavernosum, so that their action must be simultaneous in order that the erection may be perfect.

3. The *glans* has a conical form, the top of which is perforated by the orifice of the urethra, and the base, divided obliquely from above downward and from behind forward, embraces the anterior extremity of the

corpus cavernosum. It is covered by the membrane of the *prepuce*, more or less perfectly, according to the individual. Its organization is spongy, of the same nature as that of the urethra, and possesses its erectile property.

Uses.—The uses of the penis depend on its form, which is one of the principal conditions of the sexual relations; on its highly spongy organization, on which its erectile property depends; on its exquisite and special sensibility, which insures its exercise, on the passage which passes through it, and which serves for the transmission of the semen.

It is impossible to explain the phenomenon of erection except by an afflux of heat and blood into the vessels of the penis (and not, as has been asserted, into the cellules of the corpus cavernosum and the spongy tissue of the urethra), under a direct or sympathetic influence. Some physiologists have, however, attributed it to the compression of the pubic veins, between the symphysis pubis and the rest of the penis, by the action of the levator muscles; but Heister, Senac, his translator, and Richerand, have demonstrated the futility of this explanation by the arrangement of the muscles, and have referred it more properly to the mode of vitality of the organ; that is, to its erectility.

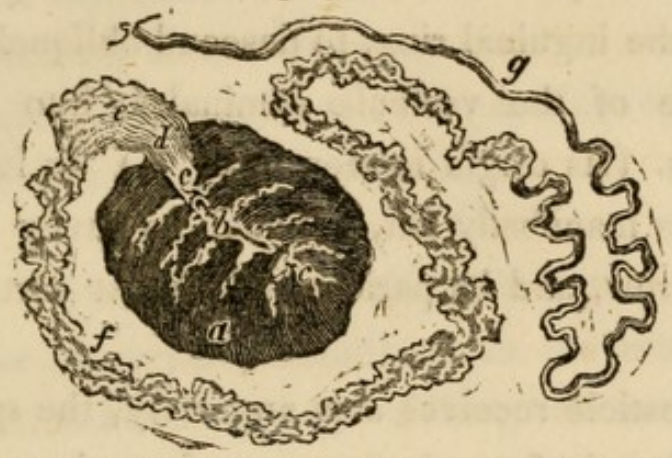
§ II.—ORGANS OF SECRETION.

Under this title are included the testicles, with their envelopes, and their excretory ducts.

1. *Testicles.*

Anatomical Structure.—The *testicles* (*testis, a witness*) have been thus termed because they constitute the principal distinctive characters of, and bear witness to virility. They are usually situated below the pubic region, at the inner and upper part of the thighs. Their form is ovoid, and they are seldom equal in size. They are covered with five envelopes, in the following order: 1. The *scrotum*, forming a pouch for the two, which is a prolongation of the cutaneous tissue. 2. The *dartos*, which is a cellular membrane peculiar to each gland. 3. The *erythroid tunic*, formed by the expansion of the cremaster muscle. 4. The *peritoneal coat*, which envelopes the testicle, like the serous membranes; that is, without containing it in its cavity. 5. The *fibrous coat, tunica albuginea*, contiguous on the outside to the preceding, and on the inside to the parenchyma of the gland. From this inner face proceed prolongations which go to the posterior edge of the testicle, forming septa or cellules, which vary in form, and which contain the *proper substance of the organ*. The latter is formed of a great number of capillary tubes, which are folded and twisted on themselves. See fig. 4. They appear to arise from the extremities of the spermatic arteries, and go toward the upper edge of the testicle, anastomose and form ten or twelve tubes, sometimes more, which unite and constitute the *corpus Hyghmorianum*. These tubes then proceed to the upper part, through the tunica albugin-

[Fig. 4.]



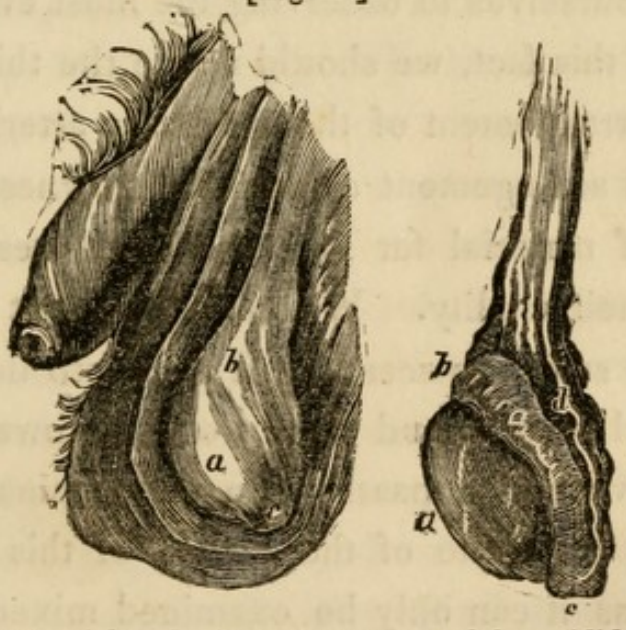
a. Body of the testicle. *b*. Tubuli testis. *c.c*. Rete testis. *d*. Vasa deferentia. *e*. Vascular cones. *f*. Epididymis. *g*. Vas deferens.

ea, which encloses them, to unite in one duct, called the epididymis, thus termed because it joins the upper edge of the testicle.

2. *The Vas Deferens.*

The *vas deferens* arises from the extremity of the epididymis, and goes from below upward, toward the

[Fig. 5.]



a. Body of the testicle. *b*. Commencement of the epididymis. *c*. End of ditto. *d*. Vas deferens.

cord of the spermatic vessels, with which it passes through the inguinal ring, to descend obliquely toward the inside of the vesiculæ seminales, into which it penetrates. (Its origin is seen in fig. 5.) In its course, it becomes manifestly flat, although its cavity is excessively narrow, and its parietes of almost cartilaginous density.

Each testicle receives also an artery, the *spermatic*, coming directly from the aorta, or from the renal arteries, lymphatic vessels, which are not seen clearly except between the seminal ducts, and which give origin to these veins, and, finally, nerves which come from the lumbar plexus, but which have not yet been followed into the parenchyma of the testicle.

Uses.—The testicles secrete the semen; but the manner in which this function is performed, is also as obscure as that of the other functions in general. In confining ourselves to observing the most evident phenomena of this fact, we should notice the thinness and tortuous arrangement of the spermatic arteries. This anatomical arrangement causes the slowness, and the quantity of material for secretion in the testicles, and modifies their vitality. We know also that in proportion as the semen is secreted, it goes into the sinus of the seminal vessels, and then proceeds toward the vas deferens, whence it passes into the seminal vesicles. We know but little of the nature of this secretion, inasmuch as it can only be examined mixed with the fluids coming from the seminal vesicles, prostate

gland, and follicles of the urethra. It is in this state of combination, that we have studied the seminal material, as also its importance in the copulative functions. (See article on seminal fluid.)

§ III.—ORGANS OF EMISSION.

A great many parts contribute to the emission of the semen, either simply by fulfilling the uses of their structure, as the *ejaculatory ducts*, *verumontanum*, *canal of the urethra*, or by secreting the fluids designed to lubricate these same parts, and to serve at the same time as a vehicle for the seminal fluid (*prostate gland*, *Cowper's glands*, *follicles of the urethra*), or by exercising on this liquid itself an expulsive action capable of causing its excretion (*seminal vesicles*, *muscles*).

The ejaculatory ducts and the canal of the urethra as agents of transmission, and the seminal vesicles as contractile agents, will be described. (See organs of congress, p. 29, and seq.) We have now to remark in regard to the first, that a great number of the follicles secrete a fluid proper to lubricate them internally, and to favor the emission of the semen. The prostate gland which appears particularly to have this use, if it does not modify the properties of the semen, is situated near the neck of the bladder and the commencement of the urethra which it supports. It is formed of a dense tissue, of a grayish color, in the middle of which are numerous follicles, filled with a viscid and whitish fluid which is brought by ten or twelve excre-

tory passages into the urethra. The secretion of this fluid seems to be increased by that from the *glands of Cowper*, situated in front of the prostate.

Nature, to impart to these fluids a direction favorable to their emission, has placed at the commencement of the urethra, before the neck of the bladder, at the point where their excretory ducts open, a sort of dike (*verumontanum*) which is designed to prevent the return of these fluids on the side toward the bladder, and is seen in the annexed cut (fig. 8). The *muscles* which, by their action, aid the excretion or projection of the semen are, the *levatores ani*, the *bulbo-* and *ischio-cavernosus*, and the *transversus perinei* muscles. The

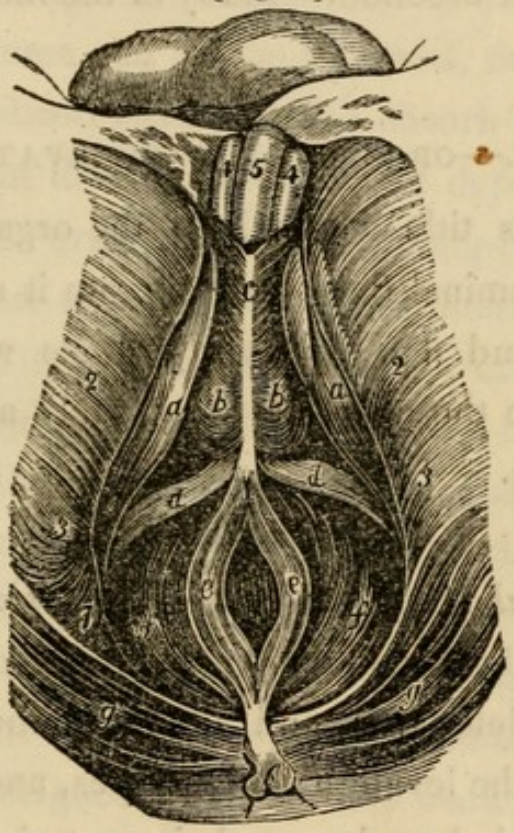
[Fig. 8.]

a. The inner surface of the bladder, showing the direction of the muscular fibres. *b*. The opening of the right ureter into the bladder whence the urine issues. *c, c*. The prostate gland cut through, and its sides exhibited. *d*. The urethra. *e*. Verumontanum. *f, f*. Orifices of the seminal ducts, marked by twigs inserted therein; the other points mark the orifices from the prostate and other glands.

first two are situated directly at the posterior and inferior part of the rectum, in the space between the rami of the ischium and pubis, the sacrum and the coccyx, and tend by their spasmodic contraction to compress the seminal vesicles and the prostate gland, from which they are separated only by the lower part of the rectum.

The bulbo cavernosus and transversus perinei muscles are situated horizontally between the anus and the

[Fig. 7.]



1. Point in the perinœum where the principal muscles arise or meet. 2. Covering of the thigh. 3. Seat. 4. Corpora cavernosa of the penis. 5. Corpus Spongiosum. 6. Coccyx. 7. Great sacro sciatic ligament. *a*, *a*. Erector muscles of the penis. *b*, *b*. Accelerator urinæ muscles. *c*. Line whence the above muscles take their origin. *d*. Transverse muscles of the perinœum. *e*, *e*. Sphincter muscle of the anus, supposed to be distended with tow or wool. *f*, *f*. Levatores ani. *g*, *g*. Great gluteal muscles.

bulb of the urethra; they also, by their convulsive action, compress the posterior part of the urethra, and thus accelerate the emission of semen, a property which induces Soemmering to term them the *musculi acceleratores*.

The *ischio-cavernosus*, termed by the same author musculus erector, and situated between the sciatic tuberosity and the corpus cavernosum, possesses an action which seems to belong more particularly to the phenomena of erection. Many of the muscles are seen in fig. 7.

§ IV.—ORGANS OF PRESERVATION.

Under this title we include the organs which preserve the seminal fluid, or elaborate it anew (*vesiculæ seminales*), and the ejaculatory ducts which transmit this fluid into the canal of the urethra at the moment of copulation.

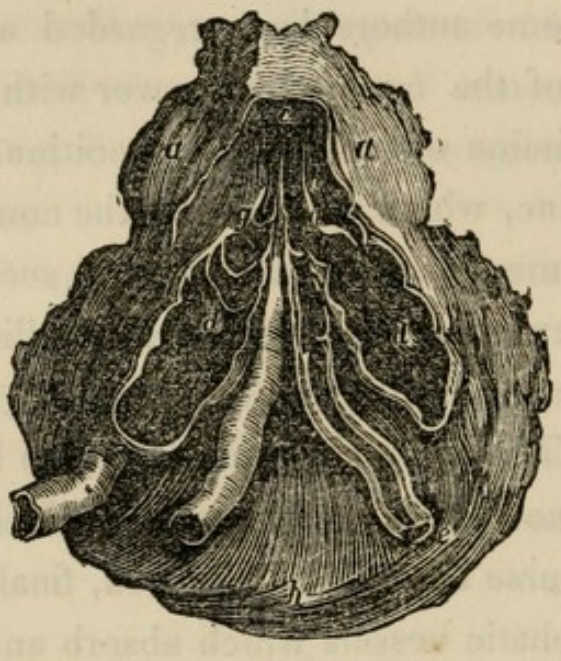
Vesiculæ Seminales.

Anatomical Arrangement.—The *vesiculæ seminales* are two membranous layers separated from each other by the vasa deferentia, and situated obliquely between the rectum, the levatores ani muscles, and the bladder; they are much broader at their posterior than at their anterior extremity, where they present a neck-shaped contraction terminated by a canal one or two lines long which is joined at an acute angle with the vas deferens. The parietes of the seminal vesicles are composed of two membranes, viz., an internal, which

seems to be a continuation of that of the vas deferens, and which some authors have regarded as muscular, on account of the contractile power with which it favors the emission of semen during coition. The second membrane, which is evidently the continuation of the mucous membrane of the urethra, secretes a fluid which has every appearance of the follicular fluids, but its nature, quantity, and uses, are not yet well ascertained. The seminal vesicles receive bloodvessels which have no special names, nerves which are so fine that their course can not be followed, finally, very numerous lymphatic vessels which absorb and carry into the circulation the fluids which are deposited and secreted in these organs, when from long-continued continence they are not excreted. The interior of the seminal vesicles presents tortuous cells or canals separated by as many ridgelike appendages, like those found in the neck of the gall bladder, which cause the grooved appearance remarked externally. This structure is seen in the annexed cut (fig. 9).

Uses.—It is not as easy as it is imagined to define the uses of the seminal vesicles. Are they the secretory organs designed solely for the work of generation, furnishing to the semen a particular fluid which forms its greater part and imparting to it the prolific qualities while it passes through them? or are they simply the reservoir for the seminal fluid, secreting always a mucous fluid designed to moisten their internal surface, like all the cavities provided with follicular membranes?

[Fig. 9.]



a, a. Prostate gland. *b.* Gland cut away to show the ducts of the vesiculæ. *c.* Ends of the ducts. *d, d.* Cells of the vesiculæ. *e.* Left vas deferens, also cut open to show its connexion with the vesiculæ. *f.* Right vas deferens. *g, g.* Openings of the vas deferens and vesiculæ into the urethra. *h.* Bladder. *i.* Ureter.

Swammerdam and Richerand have contested this latter opinion to adopt the first which experience seems especially to justify: in fact, it is certain that the physiological integrity of the seminal vesicles is no less indispensable to the work of generation than that of the testicles, which proves in every hypothesis (at least in the human species) the necessity of the mixture of the liquids which they supply, and also refutes the idea of some physiologists, who regard the vesicles as simply fulfilling the uses of position or as mechanical means for the transmission of the seminal fluid at the moment of ejaculation.

Ejaculatory Ducts.

Anatomical Arrangement.—The ejaculatory ducts which result from the union at an acute angle of the anterior extremity of the seminal vesicles with the vas deferens, pass through the prostate gland, and go separately to the lower part of the urethra at the base of a lacuna called the *verumontanum*.

Uses.—The use of these passages is to transmit into the canal of the urethra the seminal fluid, and thus to contribute to the act of coition.

GENITAL ORGANS OF THE FEMALE.

§ I.—ORGANS OF CONGRESS.

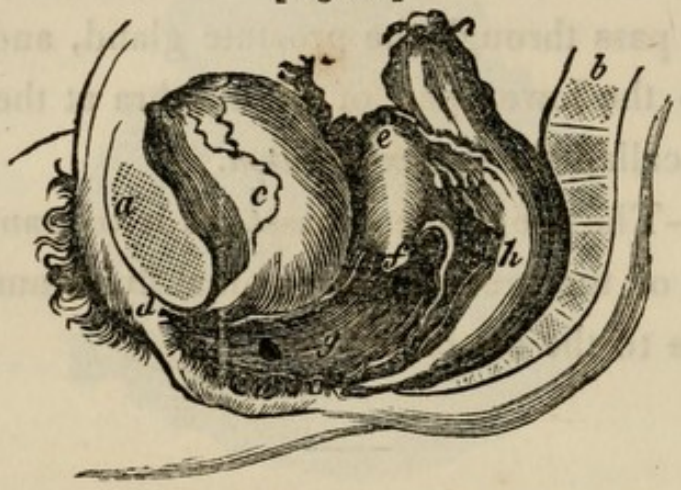
The parts which compose this order of organs do not contribute equally to the act of reproduction; some are placed externally and seem to be only organs of pleasure, such as the clitoris, nymphæ, &c.; others are connected more intimately with the phenomena of coition, and fulfil more directly the purpose of the union of the sexes. Viewed in this light, the vagina alone seems to deserve a particular description.

Vagina.

Anatomical Arrangement.—This organ is situated in the centre of the lower strait of the pelvis between the rectum and bladder; it has the form of a cylindrical membranous passage slightly curved in its posterior part, and is five or six inches long. One ex-

tremity opens at the base of the vulva, and the other embraces the neck of the uterus with which it is continuous, as is seen in fig. 10. The vagina is a soft,

[Fig. 10.]

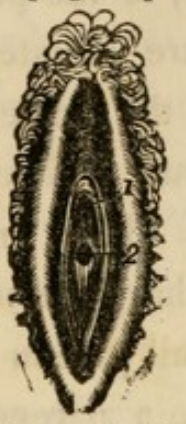


a. The bony portion of the pelvis separated from its junction with its companion. *b.* The spinal column of the back. *c.* The bladder. *d.* The orifice of the urethra. *e.* The body of the womb. *f.* The neck of the womb. *g.* The vagina. *h.* The rectum, or end of the intestines.

supple, extensible structure, composed 1st, of a portion of the peritoneal membrane which occupies only its posterior and superior part; 2d, of a thick cellular layer, constituting its proper membrane and occupying its whole extent; 3d, of a spongy body placed at its entrance (*plexis retiforme*) sensibly erectile during coition, and surrounded with muscular fibres which perform the office of a sphincter, the *constrictor cunni* muscle; 4th, of a mucous membrane which it possesses in common with that lining the whole uterine system, which presents corrugations especially at its anterior extremity, where they conceal numerous porosities, whence flows the mucous fluid which continually lubricates the interior of this passage; 5th, of a mem-

branous and semicircular fold which contracts the entrance in virgins, and is termed the hymen. It is seen in fig. 11.

[Fig. 11.]



1. Urethra. 2. Hymen.

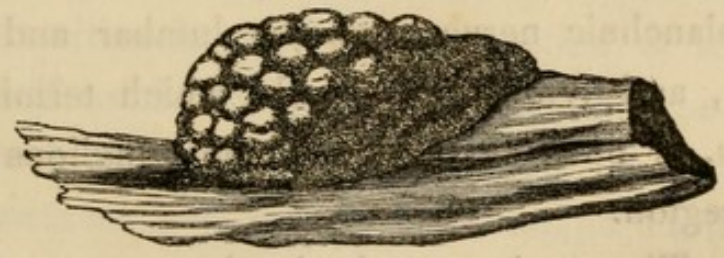
Uses.—The vagina (*the sheath*), as its name indicates, is destined to receive the penis in the act of coition, to give passage to the menstrual fluid, and to the fetus, at the time of labor.

§ II.—ORGANS OF SECRETION.

1. *Ovaries.*

Anatomical Arrangement.—To this new order of organs belong the ovaries and Fallopian tubes. In considering the ovaries as secretory organs, we are far

[Fig. 12.]



from adopting the opinions of the ancients, and some moderns, who think that these organs, in the repro-

ductive process, furnish a reproductive fluid, like the testicles. It seems, however, reasonable to admit that the formation of ova or germes capable of being developed by impregnation, is the product of a real secretion. The ovaries are situated on the sides of the womb, in the fold of the posterior wing of the broad ligaments of the uterus. They were called by the ancients *female testes*. They are two whitish vascular oblong bodies, which have been compared in size and form to those of a small pigeon egg. Each ovary has a peculiar membrane, a parenchymatous tissue presenting the appearance of the proper substance of the testicle, or of the parotid gland, seeming also to be an expansion of its proper substance, and even forming cells for the corpuscles with membranous, vascular, and transparent parietes. These vesicles are fifteen or twenty in number, and vary in size from a millet seed to a bean. They contain a viscid fluid, having all the characters of albumen. The arteries of the ovaries (*spermatic*) arise directly from the aorta, and, in the opinion of Haller, their size seems to correspond with the amorous nature of the female. They are supplied with some very small nervous twigs from the trisplanchnic nerve, and the lumbar and sacral plexuses, and lymphatic vessels, which terminate in the veins, or open in the lymphatic ganglions of the lumbar region.

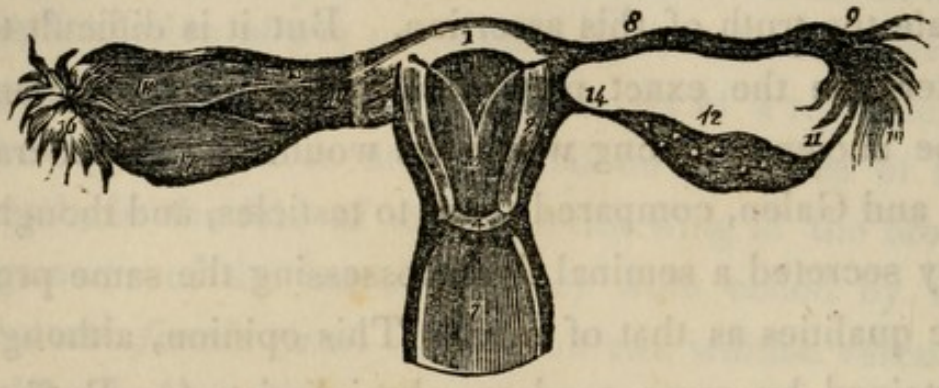
Uses.—The ovaries are absolutely necessary to generation. Their natural absence, their removal, and

most of their diseases, which cause sterility, demonstrate the truth of this assertion. But it is difficult to determine the exact part they take in this function. The ancients, among whom we would cite Hippocrates and Galen, compared them to testicles, and thought they secreted a seminal fluid possessing the same prolific qualities as that of man. This opinion, although sustained by some modern physiologists (as Buffon, Roussel, Tinchant, &c.), is now for the most part abandoned. Since the time of Stenon, who was the first to observe the vesicles of the ovaries, and to compare them to ova containing all the rudiments of the man, simply wanting the vis vitæ furnished by the male, it has generally been thought that these vesicles, when once rendered fecund by impregnation, break the calyx in which they are enclosed, and pass through the Fallopian tubes, and thence into the uterus.

2. *Fallopian Tubes.*

Anatomical Arrangement.—The tubes are two conical membranous passages, situated within the anterior wings of the broad ligaments of the uterus. One of their extremities is terminated in a kind of fringe, to adapt itself to the ovary, while the other opens by a very narrow orifice at the upper angle of the uterus. These parts are well seen in the annexed cut (fig. 11). The tubes are formed of two membranes, one of which belongs to a prolongation of the peritoneum, and the other is the continuation of the mucous mem-

[Fig. 11.]



1. Section of the womb, upper part.
2. Section of side.
3. Section of lateral covering.
4. Section of lower part of womb.
5. Cavity of the womb.
6. A prominence leading from the openings of the Fallopian tubes.
7. The vagina.
8 and 9. Fallopian tube cut open.
10 and 16. The fimbriated extremity of the tube.
11. The pavilion.
12. The ovary.
13. Vesicles in ovary.
14. Continuation of ovary.
15. Ligament of ovary.
17. Pavilion of right ovary.
18. Right ovary.
19. Connecting band.

brane of the uterus, and of a proper tissue, which seems to possess some degree of erectility.

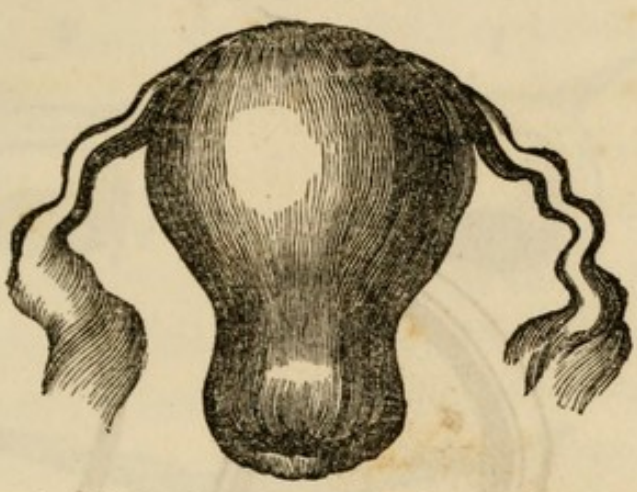
The use of the tubes is to establish a communication between the uterus and the ovaries; but this communication only seems to take place at the moment of coition, and by a kind of erection of the fimbriated edge, which then embraces the ovaries, and forms a passage which transmits from this organ to the uterus what the female furnishes in generation, and probably from the uterus to the ovary, the fecundating principle which comes from the male.

§ III.—ORGANS OF PRESERVATION.

Uterus.

Anatomy.—Although our opinions differ materially

[Fig. 12.]



from some physiologists in regard to the uterus,* we apply this term to that organ which furnishes to the product of conception the space and material necessary for its nutrition and development. Its form is seen in the cut above. It is situated obliquely in the cavity of the pelvis, between the rectum and bladder, as shown in the figure on the next page, where, however, it is represented in an advanced stage of pregnancy. It is kept in place by several ligaments, and presents nearly the form of a triangle flattened from before backward. Its base is situated upward and backward, and is bounded laterally by two angles, which indicate the points of insertion of the Fallopian tubes, as seen in fig. 11. Its summit or neck, directed downward and forward, is embraced by the vagina, into which it projects for four or five lines, and is perforated by an oval opening, the os tincœ, which establishes a communication between these two organs. This os

* Many physiologists regard the uterus, like the seminal vesicles, as a reservoir for preserving the seminal fluid secreted by the ovaries.

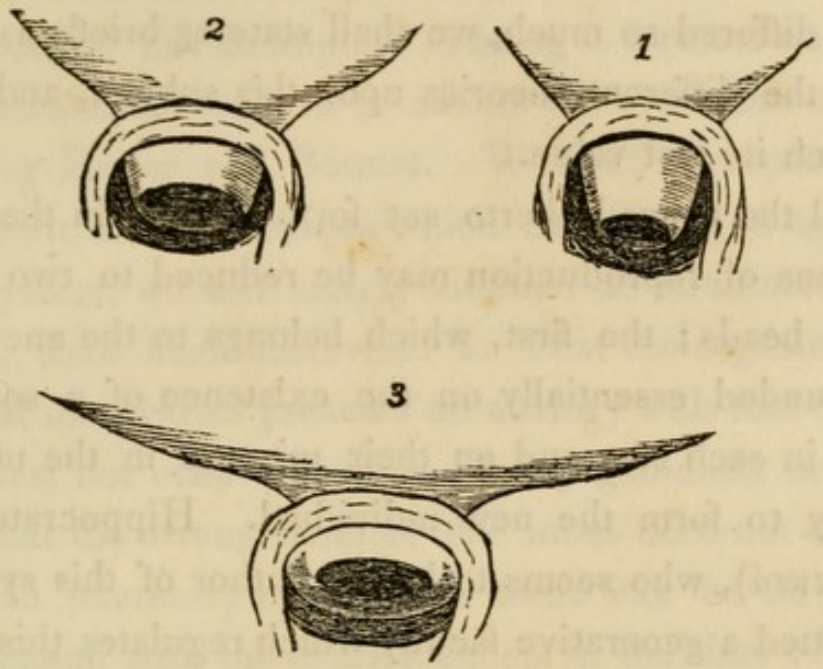
[Fig. 13.]

a. The womb. *b* The vagina. *c.* The bladder. *d.* The rectum.

tincœ varies at different periods of pregnancy, as is seen in the cut on the next page.

The uterus is composed: 1, of a serous membrane, which serves as an external envelope in the whole of its extent, except at the lowest part of its posterior face; 2, of a peculiar grayish dense and elastic tissue, presenting many bloodvessels, and the nature of which is not yet ascertained; 3, of an internal membrane, having all the characters of mucous membranes, presenting a great many porosities which have been regarded as the excretory vessels of the mucous crypts, and the orifices of the bloodvessels,

[Fig. 14.]



which exude drops of blood within the uterus at the menstrual period; 4, of arteries and veins, which come from the hypo-gastric; of lymphatic vessels, which attend them; of nerves, which arise from the renal plexuses and inferior mesenteric, from the intercostal and sacral nerves.

Uses.—The uterus, as its name indicates, is destined to preserve the fecundated germe during the period of its development, that is, during pregnancy.

GENERATION.

Having described separately in both sexes, the instruments of generation, and made known their peculiar functions, it remains to consider the part taken by each sex in the accomplishment of this function; but to avoid falling into new errors on so obscure a sub-

ject, and about which physiologists and naturalists have differed so much, we shall state as briefly as possible the different theories upon this subject, and give to each its just value.

All the views hitherto set forth to explain the phenomena of reproduction may be reduced to two principal heads; the first, which belongs to the ancients, is founded essentially on the existence of a seminal fluid in each sex, and on their mixture in the uterine cavity to form the new individual. Hippocrates (*de Genitura*), who seems to be the author of this system, admitted a generative faculty which regulates this kind of formation, and believed also that the *strong parts* of the male and female seminal fluids unite and form the differences in the sexes. This system which Aristotle (*de Generat. animal.*) and Descartes (*Traitè de l'homme*) have modified only by substituting for the generative faculty of Hippocrates their fermenting principle, still has many partisans. Buffon (*Natural History*) has embellished it with all the charms of his eloquence, and admits, with the father of medicine, that in each sex, the semen comes from all parts of the body; and he thinks that the molecules which constitute it are so many rudiments of our organs which are placed by a kind of vital attraction around a mould the existence of which he admits. Doctor Roussel (*Systeme physiol. et mor. de la Femme*) opposes the system of Buffon violently, and restores to the system of Hippocrates all its simplicity, and is one of those who has

defended the latter most earnestly. Still more recently a physician* has attempted to bring it forward on certain facts which seem to invalidate the objections made to it by Haller and Bonnet. Without attempting to lay down all the reasons which can be urged against this system, we will simply mention as circumstances which have been observed: 1. That the organic texture of the ovaries presents no analogy with that of the testicles, nor even with those of any glandular organs. 2. That the arrangement of the tubes does not represent an excretory canal since there can be no communication with the ovaries except at the time of conception; which must destroy all ideas of the seminal fluid in the female. 3. That even with the hypothesis of the secretion of a fluid peculiar to the female, the fluids which come from her present none of the physical and chemical characters of the seminal fluid in the male; they can not be considered as essential to fecundation, since females conceive without emission, and often even without the slightest sensation of pleasure. 4. That the fruit of the conception observed in the ovary and the tubes at its first development does not exist in the uterus before the second week ensuing to copulation.

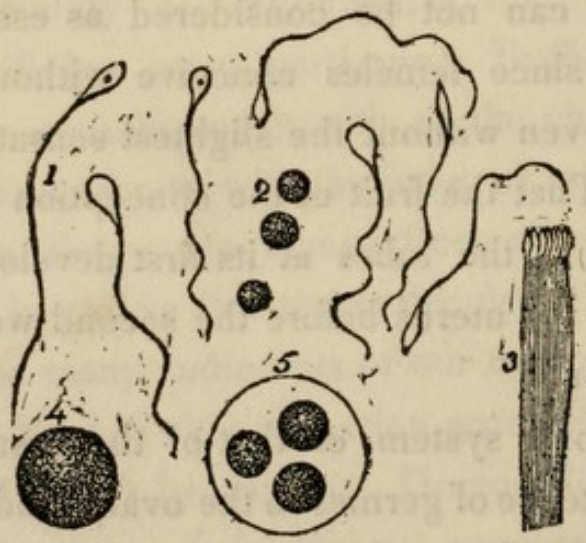
The second system, or that of the ovarists, admits the pre-existence of germes in the ovary, and is founded principally on the analogy of structure of this organ in the females of oviparous and viviparous animals.

* Tinchant, Doct. novo sur la product de l'homme.

Steno (*Diss. piscium*), Malpighi (*de Gener. pull. in ovo.*), Harvey (*de Genet. ovi.*), Vallisniery (*de Genit. animal.*), Haller (*Physiology*), and Bonnet (*Sepulchret. anet.*), who have adopted it, regard the vesicles in the ovaries as so many ova, which contain all the lineaments of the new being, and which require only the contact of the semen to receive life. Bonnet thinks that these germes pre-existed in the ovaries since the commencement of the world, *boxed in* one within another, and developing themselves successively by the effect of generation; but this opinion which finds but few partisans except in the Italian schools, is now nearly abandoned.

Some naturalists have also thought they found in the male semen animalcules, such as are seen in the cut (fig. 13), which by their development might be-

[Fig. 13.]



1. Animalcules of a man, taken from the vas deferens immediately after death. 2. Seminal granules. 3. A bundle of animalcules as grouped together in the testicle. 4. Seminal globule. 5. Same surrounded by a cyst or bag.

come beings similar to those producing them. Leuwenhoeck (*Anat. epistol. variæ.*), Boerrhaave (*Physiology*), Geoffroy (*Monstrositics*), Lieutaud (*Traité d'anat.*), &c., who have advanced this idea, think that the vesicles of the ovaries are only the envelope or the nest of the ovum, which must receive that of the animalcules victorious in the strife established between them at the moment of the reproductive act. But this opinion, which is as improbable as that of the *boxing up*, has but few partisans.

Throwing aside these last two hypotheses, it is certain that the system of the ovarists combines in its favor the most votes and the greatest probabilities. It is more in accordance with the organic arrangement of the parts, and also with the laws of physiology. It is true the man here co-operates in generation only in a secondary manner, that is, by furnishing only the principle which must animate the germes secreted by the ovaries; and farther, it is difficult to explain, according to this system, the resemblance of the children to their fathers, the inheritance of disease, &c. The physiologist Richerand, however, remarks: "The imperceptible embryo has at most the consistence of a slightly viscid glue. A body so slightly consistent must be at least very susceptible, and the male semen applied to its surface must produce a powerful effect on it. The action of this fluid on the youthful embryo is similar to that made by a seal on soft wax which preserves its impression. The impression is deeper,

the resemblance more perfect, the more energetic the action of the male." If this explanation be untrue, we must admit that it is plausible and probable; the instance of hybrids, or of animals belonging to different species, testifies in its favor by the resemblance of the male externally, and by that of the female internally.

Of the Seminal Fluid.

The semen is secreted, as is well known, by the testicles, and the species is regenerated by this fluid. It not only repairs the losses of generation, but it also procures physical sensations which command imperatively the approximation of the two sexes. In all animals we have already stated that this material goes into the sinuses of the seminal vessels, to proceed thence toward the vasa deferentia, which transmit it into the seminal vesicles. This fluid is a spirit, which is termed the *aura seminalis*, as we shall show.

Let us premise that no passage in the human economy presents a more compact or denser tissue, nor a narrower diameter than that of the vas deferens. It is difficult to pass into it a fine bristle. The Fallopian tube has a diameter nearly three times as large. This organization aids us to conclude that the seminal aura is transmitted without mixture in the seminal vesicles. Let us examine this assertion and its consequences.

The human semen enclosed in the seminal vesicles has lost its primitive purity by its aggregation with the

fluids of the seminal vesicles. After its emission, a new aggregation takes place with the viscid matters of the prostate gland and urethra. In this state it is emitted, and while its heat is preserved, it should be analyzed. It is positively formed of three very distinct parts: one fluid grayish white and viscid, another thick and whitish, and the third part appears as a colorless and almost invisible vapor; it is sometimes so subtle, so highly volatile, that it can not be appreciated except by the special and peculiar odor it exhales, and which has been compared to that arising from several vegetables, especially chestnuts. For this reason, it has been termed the seminal aura. The semen has a taste more or less saltish, according to the quantity of the seminal aura and the vigor of the patient. Some authors have asserted that this part of the semen is the only part which went toward the orifice of the uterus, and produced impregnation. The following experiments seem to justify this opinion. In 1808, being attached to the medical staff of the Princess Pauline, M. Morsaqui, a learned and modest naturalist of Turin, wished me, together with M. Prinseteau, to witness the repetition of his experiments on generation. The semen of a dog was received in the broad part of a kind of curved tunnel about two inches long, the other end of which was cylindrical and extended two or three inches into the vagina of a slut in heat, so that the seminal aura might be introduced. In thirty experiments strictly noted, eighteen sluts con-

ceived. We obtained the same results on two asses, but after many attempts, on account of the unruliness of the stallion which served for our experiments. We have observed in these different cases, that when the semen has been exposed to the air for some time, it would become less prolific, and would even lose its fecundating principle. Only one slut was impregnated with semen which had been exposed five minutes to the air. Sometimes too when a longer tube has been used, conception did not occur.

It follows from other facts, that the seminal aura ought to remain a certain time in the seminal vesicles, to experience there certain changes, and become prolific. On the other hand also, the semen, to be productive, ought not to remain too long in its reservoirs. Persons who indulge too frequently in sexual intercourse, finally emit only a viscid fluid, without the special odor which announces the presence of the seminal aura, and which is consequently unfit for fecundation; while again, others who live a life of celibacy, or of prolonged continence, lose a great part of the seminal aura, which by the subtle essence of which it is formed, always tends to escape and to leave the viscid and mucous parts which serve as a vehicle for it.

I have often been consulted to remedy prolific discharges in perfectly formed individuals, in whom the semen resembled that of eunuchs who were castrated some years after puberty. The semen acquired its

prolific quality only after a methodical course of treatment, as we shall see in the course of this work.

I must remark here that in Turkey and other countries of the Levant, I have often had occasion to examine this fluid passed by eunuchs, in whom the erectility of the virile organ has been preserved; it was colorless and tasteless, and had the consistence of a more or less thick and ashy white glue. Some of these individuals were very amorous, and presented symptoms of consumption when they abused themselves; they died from excess in coition or masturbation. I was acquainted with Velutti, a celebrated singer, who was castrated at an early age by his father, an Italian singer, in order to obtain for him a place in the Pope's chapel. He kept his mistress, in London, and injured his health by his intercourse with her. Look too at those females who conceive contrary to the wishes of their husbands, and also those who attempt to frustrate nature. The instances of pregnancy with concubines related by authors, as Plempuis, de Graaf, Johnson, are also proofs in favor of this opinion: whence we conclude that the seminal aura is the vivifying spirit, while the other fluids are only its vehicles.

The effects of the seminal fluid act with so much force on most of our organic or relative functions, that we can compare them in some circumstances to an imperious power which rules despotically over all the

actions of our organization. The brute, as well as the rational being, is subject to it.

See the proud stallion, who comes forth from his stable, rearing, and plunging, and neighing. His organ of smell directs him to the mare, his breath seems to burn, while a hot fever consumes him. His passion is satiated, and all these phenomena disappear; he becomes sad, he walks slowly with his head down, and allows himself to be led by a child. So too with a man who has exercised the procreative faculty—he needs repose and sleep to restore and re-establish the harmony of his physiological functions. Venette says, and with reason, that of all animals man is the most exhausted by the reproductive functions. One emission of semen causes more exhaustion, according to Avicenna, than the loss of forty times as much blood.

Is it necessary to refer even briefly to the opinion of some ancient philosophers, who regarded the spermatic fluid as material and spiritual, as coming directly from the soul? The most remarkable of these philosophers were Epicurus, Socrates, and Aristotle. Plato considered this fluid as secreted by the spinal marrow. Pythagoras viewed it as coming from the froth of the blood. Finally, Democritus and Hippocrates regarded it as coming from the whole animal economy. Our space forbids us to mention all the hypotheses or reveries of men at all periods, who have attempted to explain the origin and phenomena of this fluid.

Of the Copulative Functions.

The functions of reproduction consist in the union of the different sexual parts as follow.

The organs destined to fulfil this act, must be properly prepared: on one side by the erection of the male organ, in which the vessels of the two corposa cavernosa and of the spongy tissue of the urethra are filled with blood, while on the other hand the other parts which compose the genital apparatus, contribute powerfully to the reproductive process, by the following action: the seminal vesicles, stimulated by the presence of the prolific fluid, contract by virtue of the contractile properties of their tissues, and compress on all sides the fluids they contain. The levatores ani muscles are convulsed at the same time by the sympathetic effect of the venereal orgasm, exercise on these fluids the same pressure, and thus force them to enter into the ejaculatory ducts, through which they pass and come into the lower part of the urethra, near the verumontanum. The prostate gland, compressed by the adjacent parts, or closing by their peculiar contractile force, pours into the urethra near the orifice of the ejaculatory ducts a limpid, viscid fluid, which is mingled with the seminal fluid. The presence of these united fluids in the lower part of the urethra causes a dilatation and a voluptuous sensation, which soon excite the contraction of the bulbo-cavernosus and transversus perinei muscles, which in turn press the semen contained in the canal of the urethra, and force its

expulsion in the form of jets. The genital system of the female, excited by desire, under the influence of the blood which enters all the tissues, is convulsed by the numerous nervous filaments, which are expanded in all its parts.

The organs thus prepared, the penis enters the vulvo-vaginal canal in a proper position. All the genital organs then exercise simultaneously and reciprocally a special labor, which causes in man the emission of the seminal fluid, in the manner we have explained, which is thrown with force on the uterine orifice; and in the female, the emission of the mucous substances secreted by the glands situated more particularly around the clitoris. The whole body has participated in this convulsive effort, and it seems that all the other relative or organic functions have suspended their existence or special action to participate in that of reproduction. Borden remarks, "it seems at this moment as if nature had forgotten every other function, and is occupied only in collecting its strength, and directing it to the same organ."

The copulative positions should vary according to the sexual arrangements, so as to convey the spermatic fluid on the orifice of the uterus. Most of them are indicated when treating of the lesions or faulty directions of the genital organs.

Organic Functions of Reproduction.

We think that the moment the seminal fluid is

placed on the os tincœ, the uterus is unusually excited, and seems to expect with eagerness the food for which its appetite is so voracious; while at the same time the fimbriated ends of the Fallopian tubes are completely erected, and embrace the ovaries.* In fact, as the semen is thrown by the penis on the orifice of the uterus, it is received readily by a suction termed *spermatic*, and by this special function of the neck of the uterus, which transmits the semen into its body, the seminal aura is disengaged from its vehicles, and passes through the narrow passage of the Fallopian tube, which, by its undulatory motions, carries it on one or more ova. The seminal aura then penetrates into the membranes with which they are covered, mixes its atoms with the substances of the ova, and impresses on them the elements of life. The ovum, fecundated by the semen of the male, swells and tumefies, assumes a yellowish color, and in a few days is detached. The Fallopian tube, whose fimbriated extremity has remained applied to the ovary during the whole period of conception, receives the homocular germe, and deposites it on the uterus,† where it receives the elements for its development, and after remaining here during gestation, nature thrusts it into the world.

* De Graaf and Magendie have shown by experiments that during the act of coition, the edges of the Fallopian tubes were erected, and applied to the ovaries.

† See Velpeau's Tables on Embryology.

Whatever may be the system by which the physiologist explains generation, he is forced to admit that this function requires, in the sexual relations, a concurrence of physical and moral conditions, without which it becomes necessarily impossible or unproductive. Let us leave the field of hypothesis to follow and determine these different conditions in the two sexes. They relate—1. To the organs of conjunction. 2. To the organs of secretion or fecundation. 3. To the organs of education or preservation. 4. Finally, to many other important considerations which oppose impregnation.

CHAPTER II.

ETIOLOGY AND THERAPEUTICS OF STERILITY.

As the causes of sterility constitute for the most part so many real diseases, we have thought proper to study in the same chapter these two objects which, as formerly remarked, ought always to follow each other as a shadow follows the body. In fact, it is only by adapting the medication of a disease to its cause that we can expect to cure it. To establish some order in the explanation of such matters, we shall follow the plan pursued in describing the genital organs of the two sexes; to omit none of the circumstances on which it treats, we shall consider in detail the causes of sterility, and study them separately, and mention the mode of treatment demanded by each.

SECTION I.

STERILITY IN THE MALE.

ARTICLE I.

Diseases of the Genital System considered in Man as a Cause of Sterility.

§ I.—DISEASES OF THE ORGANS OF CONJUNCTION.

1. *Absence of the Penis.*—There are several instances of this deviation of formation which may be

congenital or accidental. Schenk (*Observat. Medic.* lib. 10), and Cattier (*Observ. Med.*, No. 19), have related two very remarkable cases of the first character. M. Foderè also (in his *Medicine legale*, vol. i., p. 564) has stated the history of a young soldier who had well-formed testicles, but in the place of a penis presented a prominence similar to a nipple perforated at its extremity, from which exuded by friction a whitish fluid having the appearance of semen. This deformity may also be caused by the removal of the penis by a surgical operation, by the bite of animals, or by a burn.

Although the absence of the penis is generally regarded as a cause of impotence, yet there are instances of persons destitute of this part and who have had families. In fact, to produce impregnation it is only necessary for the penis to present externally a prominence which permits the introduction of the semen into the sexual parts of the female. In some cases also, nature may be assisted by art in this latter condition.

Lieut. Col. L——— received at the battle of Wagram a ball which passed through the centre of the penis. The inflammation in a few days was so intense that the part became gangrenous. Amputation, which was the only mode of saving the wounded man's life, was performed by M. Richard, surgeon-general of the hospital of Vienna, where the wounded man had been carried, and I took care of him.

M. L. who had been married a few days before his departure for the army, was extremely anxious on his

return to pay his young wife his tribute of conjugal love. Having had occasion to see him at this period, he related to me his infirmity which seemed to take away from him all hope of being a father. In this state of things I recommended to him the following apparatus. I made for him, of gum elastic, a kind of cone five inches and a half long, open at its two extremities, the narrowest end of which embraced the neck of the uterus, while the other was more sloping, and was fitted to the stump of the penis. A suppository of gum elastic was placed in the rectum, while at the same time a slight friction of the perinœum excited the contraction of the vesicles and ejaculatory muscles and thus favored the emission of semen. By these means Mad. L. became the mother of two children.

2. *Excessive Size of the Penis.*—Some authors, among others, M. Fodéré, have regarded unnatural length of the penis as a cause of sterility. If this proposition can not be admitted generally, we must allow that this circumstance in some cases may impair fecundation by the severe pains caused to the female in coition; and also as a general remark, that the introduction of the penis too far in the act of venery is less favorable to fecundation, inasmuch, as then the semen penetrates less easily into the orifice of the uterus. But art can readily obviate this inconvenience by means of an apparatus placed on the vulva and perforated in its centre to receive the penis.

3. *Small Size of the Penis.*—See article, *Anaphrodisia*, where I hope I have proved and demonstrated the mode of developing the tissues of the corpus cavernosum by simple and physiological means. We can now erase from the treatises on medicine the remark that smallness of the genitals is an absolute cause of sterility.

4. *Deviations in the Direction of the Penis.*—In some individuals the penis presents a direction which by destroying the natural relations of the sexual parts, (as it is seen in fig. 15), may prevent the penetration of the seminal fluid into the orifice of the uterus and thus render the coitus sterile, if this deformity be not corrected by proper means. This circumstance may also be the effect of a simple curve of the glans by the drawing down of the frenum during the erection; in this case the penis can be righted by dividing the frenum with scissors and preventing the adhesion of the divided parts by placing lint between the lips of the small wound.

[Fig. 15.]

Sometimes tumors are developed in the substance of the penis, which give it a wrong direction, and become

the accidental causes of sterility. M. Patissier (in the Dict. des Sc. Medicales, vol. xl., p. 183) has mentioned two cases of osseous concretions, large enough to produce this effect and impede the emission of semen and of the urine. Both yielded to the use of mercurial frictions made for twenty days on the course of the tumor.

The aneurismal dilatation of the corpora cavernosa and urethra may also give rise to a deformity of the penis. Both Albinus (*Annat. Anatom.*), and Richerand (*Nos. Chir.*), have cited a case of rupture of the fibrous membrane of the corpus cavernosum. I had occasion to observe the same accident in a colonel of cavalry after violent efforts of coition; beside severe hemorrhage which occurred immediately, there appeared shortly after, at the ruptured part, a large tumor which increased at the moment of erection, although the extremity of the penis then preserved its softness and flaccidity. The surgeon-major of the regiment and myself recommended the patient to apply to the penis a cylinder of gum elastic arranged so as to press on the aneurismal tumor, yielding to the changes in the dimension of the organ. Mr. D., after being married two years, became a father, although he could not exercise his marital privileges except by means of this instrument. Since that time I have seen in my practice several cases similar to this, which have generally been followed by the same result if the same means were used.

5. *Bifurcation, or Doubleness of the Penis.*—Many authors, as Schenk (*Lib.* 4, *Obs.* 8), Weikard (*Annal. Med.*) and Marc (*Dict. des Sc. Med.*, vol. xxvii.), have mentioned instances of doubleness of the penis, but no one has yet considered this deformity with a view to sterility. If, however, it does not always prevent the generative faculty, it may render the act of coition difficult, and even become an absolute and incurable cause of impotence, when the angle of bifurcation is such as to prevent congress of the sexes.

6. *Imperforation of the Prepuce and Glans.*—When the prepuce and glans are imperforate, the fluids which escape from the canal of the urethra must necessarily find some other outlet. This deformity is easily remedied by a strait bistoury, a trocar and canula of silver, or gum elastic, with proper dressings.

7. *Hypospadias.*—This is one of the most important and severe diseases of the genital system. In modern times, most practitioners regard this deformity as the reproach of surgery. Many authors, as Haller (*Dict. des Sc. Med.*, vol. xxiv), Eschenbach (*Cours de Med. legale*), Mahon, &c., have asserted that this was an absolute cause of sterility. Many cases related by Schenk (*Obser. Med.*), Petit-Radel (*Encycl. Method.*), Koop (*Annal. de Med. pol.*), &c., tend to invalidate this statement; but to decide how far hypospadias may injure or impede parturition, it is necessary to establish demarcations presented by this affection relatively to its seat, or to the circumstan-

ces which may favor the success of a surgical operation.

The term hypospadias is applied to a deformity in which the orifice of the canal of the urethra opens at the under part of the genital organ. It appears in different forms and situations, which render its cure more or less difficult, and sometimes impossible. The nearer the opening is to the glans, the more favorable the chances for success.

In most of these cases, the urethra terminates at the base of the frenum, near the fossa navicularis. In some cases, fecundation may doubtless occur. I have known some patients who have had children, notwithstanding this arrangement. Morgagni, Sabatier (who was himself affected in this way), Dupuytren, Boyer, Richerand, and Maltati, of Vienna, have known persons to be fathers of many children, although the urethra opened below the glans. Under similar circumstances, fecundation could not occur, because the glans was curved too much downward during the erection. The opening of the urethra was closed by this direction, and the seminal emission took place very imperfectly, or not at all. The semen would enter the canal during the erection of the penis; it lost its prolific power, when the action of the genital organs did not nominally take place.

The hypospadias may be double, forming two openings, one smaller near the extremity of the glans, the other toward the fossa navicularis. They rarely com-

municate, and the latter alone gives outlet to the natural fluids. Sometimes, it is situated in other parts of the canal of the urethra, before or behind the scrotum. Its orifice varies in size, but is always large enough to give passage to the urine and semen. The urine comes by jets, while the seminal fluid falls out in small clots, or in filamentous drops, and sometimes flows along the perineum. In these latter cases of hypospadias, fecundation is absolutely impossible.

Let us now inquire into the best mode of operating for the relief of these cases. I have already said that most ancient and even modern authors have advised that these lesions should be left, stating that art could not remedy them, and that the examination of these lesions would prove the insufficiency, and even the physical impossibility of attempting any operation, on account of the composition of the tissues of the urethra, of the hemorrhage, and especially of the inflammation and of the constant discharge of the urine, which always impedes the cicatrization of the sides of these unnatural openings. Without discussing all these difficulties, and the remedies tried ineffectually, let us mention some successful cases, before stating our mode of operating. The Bulletin of Medical Sciences, for January, 1822, publishes a case of congenital hypospadias, occupying the lower part of the penis, one finger's breadth from the base of the glans. The following operation was performed: the surgeon introduced a trocar and canula into the glans, and

directed it from before backward, and a little obliquely from below upward, beyond the meatus urinarius, leaving the canula in the wound, and substituting for it subsequently a gum elastic bougie, until the canal was entirely restored.

Observation.—This imperfect operation was of no real advantage; the urine continued to flow through the unnatural opening, and much more would the semen follow the same course.

We find a still more conclusive instance of hypospadias than that we have mentioned, cured by M. Marestin, surgeon-in-chief of the hospital at Oleron, mentioned in the Journal Periodique de la Societe de Medicine. It was the case of a soldier 34 years old, who from his birth was affected with a perforation of the urethra at the anterior part of the perineum, through which the urine and semen passed. M. Marestin, to relieve this unnatural defect, introduced through this opening a grooved stylet, which he directed backward, and easily passed it into the bladder. He then carried the sound along the whole length of the anterior part of the urethra to the extremity of the glans, which was closed by a thick membrane. Notwithstanding the general opinion that the operation would fail, he tried it with the following result. The patient was placed in a proper position, and then, with his assistants, M. Marestin proceeded in the following manner. He introduced a probepointed stylet into the unnatural opening, and directed it on the membrane

which closed the glans, which he divided; he then pared the edges of the perineal opening, placed a silver sound in the urethra, which he introduced to the bladder; he then united the pared edges of the opening by the interrupted suture. Six days afterward, the cicatrix appearing firm, M. Marestin withdrew the needles and the sound he had left in the bladder. Notwithstanding every care, the sound could not be withdrawn without severe pain, and the cicatrix of the urethra, which was not firmly closed, was lacerated. A new sound was introduced, and by bleeding, strict diet, the use of emollient fomentations or diluent drinks, the cicatrix was completely consolidated; a stricture of the urethra remained at the spot of the cicatrix, which yielded entirely to the use of the bougies.

After these two cases, I shall mention those occurring in my own practice. If I have omitted them in preceding editions of this work, it was because I wished to state authentic facts which have been frequently repeated, and the result of which has been the means of imparting happiness to many families, giving them a pledge of love, and rebuking the prejudices of some authors, as Boyer, Astley Cooper, and many other celebrated practitioners, who have supposed art to be ineffectual in such unnatural lesions.

Case 1.—A German nobleman applied to me at the close of 1831. He was tall, thin, and spare, and was affected with a congenital oval broad hypospadias, with

thin uneven edges, situated between the two testicles; the scrotum was loose and pendent, and often soiled with the urine; when he neglected to raise the testicles to urinate, the urine came in jets, and the seminal fluid came out in drops, like expectoration; the penis was about six inches long, its erection was always imperfect and painful, and curved, the urethra forming nearly a quarter of a circle; the glans was well formed, exposed, a little large; the frenum was deficient. To ascertain the nature of this deformity, I introduced a probepointed stylet into the hypospadias, and attempted, but in vain, to introduce it along the canal in its anterior part, which I soon found was entirely imperforate. The form of the urethra, however, was well marked, establishing a kind of groove between the two corpora cavernosa to the fossa navicularis; on the other side, the stylet penetrated readily into the bladder. This being ascertained, I pursued the following course, and performed an operation which I shall mention. A mild regimen, baths, and diluent drinks, were prescribed; the penis was rubbed with an embrocation, the congestor* was then applied in different forms, and by a gradual and constant extension, repeated frequently with much care and even some difficulty, I obtained in eight months the retraction of the penis, that is, the three membranes,

* This instrument will be described and figured hereafter.

the mucous, muscular, and spongy, and also the muscular fasciculi, which are found in the spongy tissue, were elongated about fourteen or sixteen lines. Things being thus arranged, I placed my patient in a proper position.

First, I applied a congester on about a third of the genital organ, which after becoming congested was directed to the linea alba and held by an assistant. I introduced a sonde à dard, made for this purpose, into the opening of the hypospadias, and directed it from behind forward to divide the membrane which closed this canal. After some assistance I introduced the instrument about six lines. After removing the congester which was no longer necessary to hold the penis, I introduced a straight silver sound in place of the sonde à dard; I came imperceptibly, and without much effort to the end of the glans which was closed by a thick membrane, and which was also divided by a concealed sonde à dard. A straight gum elastic sound, a little larger than the sonde à dard, was introduced, extending a few lines beyond the openings. We must remark that this part of the canal of the urethra, which extended from the opening of the hypospadias to the end of the glans, appeared perfectly well-shaped and formed of its usual tissues. Its parietes were not really adherent, but were compressed like a cord. The dressings were arranged properly; suppuration and cicatrization occurred without accident. On the fortieth day, this portion of the urethra readily admit-

ted a sound, which was passed into the bladder, and through which the urine escaped.

The patient having recovered from the first operation the second was attempted. The patient having been properly prepared, and the bladder emptied, was placed on a firm table. I carefully pared the edges of the hypospadias by removing all the slips with curved cataract scissors. (The operator should be careful that all the edges are entirely raw, as the success of the operation depends on this.) I now introduced a moderately-sized sound so as not to draw too firmly on the tissues on which I operated, and especially so as not to tear the recent wounds. Four fine needles were inserted; the edges of the hypospadias were approximated and kept in place by a waxed silk and compact thread: the hemorrhage was slight. There was no remarkable symptom till the third day. A small quantity of urine had passed through the sound. Inflammation supervened; the edges became engorged. I loosened the edge of the silk a little. It was cleansed with an emollient decoction, dressed with a pledget of lint slightly spread with cerate. The patient was bled from the arm; strict diet was observed; the symptoms were subdued; the granulations rose on the wound; a slight oozing appeared in the course of a needle, which was removed on the eighth day. The opening of the needle, and also the granulations were touched with a weak solution of nitrate of silver. On the eleventh day the sound was withdrawn, and the patient

remained three days without it. Some little trouble supervened in urinating; a new sound was introduced. On the twentieth day the patient was convalescent, the cicatrix appeared solid, and by touching we perceived a stricture in the urethra, which was removed by the use of bougies.

Case 2.—M. Du ———, after consulting Prof. Rou and Dubois, came to me for my opinion. This young man had been affected from birth with a hypospadias, situated three inches and some lines from the summit of the glans. This orifice was shallow, broad, and three lines long, with hard and callous edges, showing the interior of the canal of the urethra. We readily passed a sound into the bladder. The rest of the canal of the urethra seemed well marked. A probe-pointed stylet passed rapidly through it to the summit of the glans which was imperforated. I advised the operation. This young man, however, would not give his consent until he had consulted his relatives and the venerable Dubois, my respected instructer. On the day appointed the patient was prepared, and the sonde à dard readily perforated the membrane which closed the opening of the glans. In a few days the wound was cicatrized, and the urine passed from the glans through a sound. The second operation was much more difficult than in the hypospadias of the preceding case. As the edges of this opening were callous, it was necessary to remove a great part of the substance to render the edges raw, so that less than one half of

the diameter of the canal of the urethra remained: it was necessary to take a very small sound. I tried to bring the edges of the wound together with very fine needles, but could only introduce two of them. I was obliged to make six points of interrupted suture with the needle and waxed thread: further the operation was performed without accident. The patient was ordered to drink only cold lemonade in small quantities, in order to diminish the quantity of urine which passed drop by drop from the sound. The third day he felt severe pain near the neck of the bladder; extreme agitation ensued with quickness of pulse; he was bled twice; twenty leeches were applied successively three times to the margin of the anus and perinœum, and emollient fomentations, &c., were used. The bladder was emptied several times daily by the pump. The fever subsided; the pains became less, but did not disappear entirely; the points of the suture inflamed, the internal engorgement and the fluctuation of the urine felt behind the part operated on, forced me to withdraw the sound, which caused the patient to have violent pains. Several leeches had been applied behind the part operated on, and also cataplasms and emollient baths, &c., were used. I was obliged to remove the two needles on the fifth day, and to cleanse the parts. On withdrawing the sound, a portion of the ill-united cicatrix was torn open, and urine escaped from it. I was obliged to cut out the points of suture, but the diluent treatment soon removed all the

symptoms. The wounds of the hypospadias were promptly relieved, but its opening necessarily remained larger: we then regarded the hypospadias as incurable, as there was not enough of the urethral tissues to permit the wound to be united. When the patient had recovered, I introduced a gum elastic sound whose thin parietes slightly increased the capacity of the urethra, and caused him to wear it. To this he soon became accustomed, even during the erection of the penis. Coition being now performed, I was assured that most of the seminal fluid passed through the sound, which projected but a few lines from the natural opening. This young man was twenty-six years old, of a vigorous constitution, was married, and had two children in three years.

Case 3.—I was more fortunate in the following case. M. Sch———, son of an English manufacturer, aged thirty years, of a moderate height, of a vigorous constitution, often impaired by hard labor, had never been intimate with females; he urinated through a fissure situated in front of the testicles, where we readily discovered a hypospadias oval in form, and seven lines long.

A sound penetrated readily into the bladder, and I introduced a probe-pointed stylet into the groove presented by the corpus cavernosum, which formed the other part of the canal of the urethra. With some effort, I succeeded in passing it into this passage, toward the inner third, but could not proceed farther forward. I then introduced into the canal emollient

oily injections, which brought away some sebaceous material; dilatation was accomplished by sounds, and I finally came to the fossa navicularis, without being able to pass through the urethral part of the glans.

The sonde à dard was required to pass through this part in the natural direction; it must be remarked that the glans curved on the urethra, presented no appearance of opening; the whole surface of the glans was covered; there was no frenum, and the prepuce was very small. Hemorrhage at first was profuse; it was arrested by compression, and the sonde à dard remained in the canal of the urethra; it could not be withdrawn and replaced by a bougie, till suppuration was established. The inflammatory symptoms were treated antiphlogistically. On the twenty-fifth day, the canal appeared cicatrized, and the bougie passed freely into this part of the canal. The operation for hypospadias was performed, as in the first case, with entire success; the raw edges of the wound were kept in place by five needles, without the slightest accident, except some erections, which were subdued by cold emollient lotions. On the seventh day, I withdrew one needle; on the eighth day, two; on the tenth, the other two were readily removed. The wound was touched freely with weak nitrate of mercury. The sound being withdrawn, the urine flowed freely from the canal, but, nevertheless, I introduced another. On the twentieth day, the patient was entirely recovered—the cicatrix was firm. About two

months after this operation, M. Sch. attempted the act of coition; his first essays were ineffectual; but after applying the congestor for three weeks, the genital organs acquired the necessary development to exercise the procreative function with facility.

I shall conclude this article with two other cases.

Case 4.—An individual, who had been married for fourteen years, having a wife twenty-nine years old, perfectly fitted for reproduction, was doomed to sterility, that curse of married life; and this, notwithstanding the advice of several physicians. The penis was without a frenum, and curved, and the orifice of the urethra was situated in the centre of the perineum. The erections were very free, coition was readily performed; but the semen escaped through the unnatural opening, and could not be introduced into the vagina. That portion of the canal which was directed toward the bladder was very free, and the sound passed through it easily. The course of the other part, though well marked between the corpora cavernosa, was narrow, and studded with sebaceous matter. The glans being perforated, sounds and bougies of different sizes, with the sonde à dard, to make or rather to finish the opening of the glans, gave to the urethra its desired capacity. Six weeks after, the operation was performed by the interrupted suture; the utmost precautions were taken to avoid inflammatory symptoms, and the contact of the urine between the sound and the hypospadias. The last needle was withdrawn on the

seventh day. Finally, the cicatrix appeared closed on the fifteenth day. Sometime afterward, copulation was readily accomplished, and the individual soon became a father.

Case 5.—A young Frenchman, twenty-eight years old, a little exhausted by the fatigues of war, of moderate size, but very irritable, was sent to me by Prof. Roux. He was affected with a hypospadias, three fingers' breadth behind the fossa navicularis, the imperforate glans was entirely exposed, and although without a frenum, was curved on the urethra. The opening was fissured in its extent, and even its lips were irregular, the course of the urine was free and formed a strong jet, while from the non-erectility of the virile organ, the semen escaped very imperfectly, and by small drops, on account of the curve of the member. Roux approved of my proposed plan of treatment, aided by the advice of my esteemed brethren, Nauche and Laurens, who assisted me in this long and difficult treatment. The penis, when erected, measured about five inches, the urethra only four and two lines. Many months were required to elongate the tissues of the urethra by the congester. We obtained an increase of eight lines, which was thought sufficient, and proceeded to the operation, after the following method: The urethra seemed to terminate toward the navicular fossa, the glans formed a uniform mass, without the slightest trace of an orifice. It was decided to make through the glans, a passage

in the place where it generally exists, trying to touch the tissues as slightly as possible, and then to form the termination of the urethra at the expense of the integuments.

A sound in the form of a trocar was introduced into the opening of the hypospadias, and directed from below upward, following the natural direction. I experienced much resistance, but finally came to the summit of the glans, which was divided only for about three lines. I immediately passed in a sound, which came to the bladder; the hemorrhage was at first profuse, but was soon arrested. After allowing the patient, who had fainted, to rest, he requested us to perform the other operation, contrary to our wishes, as he was in a hurry to leave Paris.

The edges of the hypospadias, which were very thin, as I have stated, were removed, so that all the tissues of the urethra might be united by the same suture. It was very difficult to accomplish this union, on account of the free discharge of blood, which prevented us from inserting our needles; the edges, however, were brought together and kept in place by the twisted suture. Notwithstanding the utmost care, a little blood remained in the canal. On the night after the operation, the patient was attacked with violent fever, pain in the bladder, &c. Leeches were applied twice to the perinœum, emollient cataplasms, bleeding from the arm, diluent drinks, and strict diet, subdued the disease a little, but the pain in the bladder and

urethra re-appeared, and considerable swelling was seen around the opening operated on; we again used leeches and emollient baths. The fourth day, we observed a discharge from the suture. On the fifth day, we were obliged to withdraw the needles; there was a great discharge of fetid matter, with small clots of altered blood; the wound was properly dressed, but gangrene soon attacked these parts, and they sloughed off; it was soon seen that a new operation was impracticable, from the want of tissues. The sound had been withdrawn and replaced by a bougie, which did not enter the bladder; cicatrization occurred rapidly. When the patient recovered, he wished to indulge in the copulative function. The member was less curved, the unnatural orifice was much larger, the semen jetted out and was thrown into the vagina. An irritation occurred at the neck of the bladder, which was treated by antiphlogistics, and only a painful running from the urethra remained, the seat of which was at the posterior part of the hypospadias, and in a portion of the urethra where bougies had been used. Cauterizations were used frequently, but unskilfully by the patient, for several months. This young man married, and by the aid of a gum elastic tube, which was almost straight, and which extended nearly an inch beyond the unnatural opening, which was itself closed by a piece of oiled silk, when the penis was erected, he was enabled to exercise the functions of coition, and in due time became a father.

Remarks.—The success of this last case is due to the advice of my distinguished professional friend Dr. Guillon, who demonstrated to me the possibility of continuing that part of the urethra which was deficient in the patient, and of restoring it at the expense of the adjacent integuments as the nose is formed in rhinoplasty. The following is the case. A man, forty-five years old, of middle stature, was affected with congenital hypospadias, which existed in front of the scrotum, and which measured eighteen lines in extent. There was almost an entire loss of the substance of its edges. This opening was very deeply grooved. It was easy by the means indicated to form the canal of the urethra to the end of the glans which was imperforate. After the cicatrization of these parts, I proceeded to the following operation. A sound of sufficient size being inserted along the entire length of the canal of the urethra, I made two incisions on the sides of the hypospadias, sufficiently deep and extensive to form that part of the urethra which was deficient. On the other hand, the orifices of the hypospadias were divided and part of their substance removed. I then brought the tegumentary parts over the sound, and I made a twisted suture with five needles. The whole was kept in place by a proper dressing, and the inflammatory symptoms were treated without accident. The patient was very docile, and readily submitted to all that was required of him. On the sixth day I withdrew two needles, and the others

were kept in place till the following day. The dressings were applied very carefully, and solid cicatrices were formed by cauterization with the nitrate of silver, but the gum elastic sound, which was frequently moved in the canal, was not withdrawn till the sixteenth day. I was afraid to remove it sooner, lest it could not be replaced without destroying the weak cicatrices. The patient wore a bougie in the canal for forty-five days, and the urine and seminal fluid readily took their natural course through the urethra.

8. *Of Epispadias.*—This deformity was so termed by Chaussier and Dumeril in opposition to hypospadias. It consists in the opening of the canal of the urethra on the back of the penis, between the two corpora cavernosa, and a greater or less distance from the pubis. Ruisch,* Salzmann,† Morgagni, Chopart, Chaussier, Dumeril, Richerand, and Breschet, have observed that this disease is much more rare than hypospadias.

The case related by Salzmann is that of a young man in whom the urethra opened near the arch of the pubis, on the back and at the base of the penis, between the corpora cavernosa, and extended to the top of the glans which was, in comparison with the length of the penis, nearly divided into two, and flattened on its surfaces. Chopart, in his treatise on diseases of the urinary passages, mentions the history of

* Thesaur. Anat., No 31. Asser. 2. No. 22. † Art. Nat. Cur., vol. iv.

a child, in whom the urethra opened near the pubic arch. We shall mention two cases to demonstrate the means used to enable the two subjects of these cures to have children.

Baron de L———, residing at Vienna, was about twenty-eight years old, tall, of a delicate rather than of a strong constitution, and was affected at birth with an unnatural opening of the urethra at the base of the penis under the bones of the pubis; this orifice was grooved from below upward, and admitted a large sound which penetrated readily to the bladder. The urine flowed out by jets, and had an upward direction; the semen also followed the same course. The penis was formed unevenly, and measured about five inches three lines. The glans was half covered by a thick prepuce, and was sufficiently well formed in its state of erectility. The genital organ formed an eighth of a circle, and we remarked in it a kind of groove which seemed to be the continuation of the urethra, and was directed toward the glans. This person was seen by several physicians as Sir Astley Cooper, Dubois, &c., and all considered him as unfit for procreation. On consultation it was determined, however, to try to introduce the sonde à dard into the groove, following the direction it presented on the back of the penis, and to attempt the union of these two orifices after the formation of this part of the canal of the urethra. The patient being placed properly, and Dubois present, I made an incision with the bistoury into the centre of the

prepuce behind the corona gland is, and with the sound I followed the groove of which I speak, found some resistance in the centre, which I overcame by depressing the genital organ, and came to the pubic extremity. The sonde à dard was withdrawn and replaced with difficulty by a very flexible straight sound of gum elastic. The hemorrhage was slight, and the patient who was very docile, experienced no bad effects from the operation.

In four weeks this urethra was formed. It was then proposed to unite the two orifices. The apparatus being arranged, as also a support, formed of several pieces easily removed, the two orifices were made raw by curved cataract scissors. The first two points of suture were made with a fine curved needle, threaded with a wax thread. I then introduced a wax sound, finished very carefully, and much more flexible in the part which passed through the curves of the congenital canal to come into the bladder. (I should here observe that for several days the patient had been accustomed to the impression of the sound, and also to mild injections into the bladder to obviate nervous and inflammatory symptoms.) This sound was introduced and kept in place by an assistant, the suture was continued, the dressing made, the penis was directed a little upward, kept in place by a bandage, and by the hand of an assistant, whose duty it was to favor the discharge of the urine and to guard against bad symptoms. The patient was confined to a strict diet, and

having great courage and admirable patience, he submitted to all the painful and fatiguing positions required of him. On the fourth day I loosened the points of suture a little: on the sixth day I divided some of them, and removed them successively: several times the granulations were cauterized. The cicatrix, which represented a small ring, closed firmly in a few days, the urine passed readily through the entire canal, and came out by jets, behind the prepuce.

Baron L———, with good regimen, and especially with the aid of the congester, obtained all the erectility necessary to fulfil the marital functions. He has since married, and now has five children.

The second case is no less interesting than that I have mentioned, but unfortunately was not so successful. Dr. Willis, first physician to the Emperor of Russia, under whom I had the honor to serve, sent me a young Russian prince, twenty-three years old, of middle height and thin. At the root of the penis, near the pubic arch, he had a narrow epispadias, which entered at the corpus cavernosum almost at a right angle: the urine also was passed in jets. When the penis was depressed it had a cylindrical form, and was very short; the glans was large and short, surrounded by a prepuce forming a large lip, which impeded its introduction into the vagina. The erections were imperfect and infrequent, and there was but little inclination to indulge in coition, which was rarely exercised. There was no trace of an urethra on the back of the

penis. This being ascertained, I removed the shapeless prepuce. After its cicatrization, I tried to form under the integuments a canal to close the unnatural orifice. In fact, I directed the sonde à dard from before backward, under the integuments, between the two corpora cavernosa. The instrument was pushed as far as possible opposite the opening of the epispadias. This artificial canal required a long time to form, notwithstanding our utmost care ; some parts also suppurated slightly, when the young man became impatient, and insisted on the third operation, in which an attaché of the Russian embassy assisted. Before the operation I stated my doubts as to its success, because the artificial canal was not completely formed, and I feared a new inflammation. I operated in the same manner as in the preceding case, but the operation was very painful. From the second day the patient was agitated and could not remain tranquil. Considerable swelling supervened along the canal and at the points of the suture. General and local bleeding, the long-continued use of emollients and diluent drinks were by turns used without allaying the irritation which the patient increased by his indocility. It became necessary to withdraw the sound and to cut the threads of the suture. The urine resumed its first direction : every symptom yielded rapidly, but the artificial canal was partially effaced. The patient would not consent to the formation of another one, but a gum elastic sound was introduced in the unnatural opening, and

kept there by a small riband tied around the glans. The use of the congester produced strong erections, and finally he became accustomed to the reproductive functions. I have learned that the prince was married and has become a father by the use of the means I suggested.

9. *Phymosis.*—The natural or accidental contraction of the prepuce, as seen in the figure, may be such as

[Fig. 18.]

to render erection painful, copulation difficult, and the injection of the semen into the vagina impossible. This makes fecundation more or less difficult, unless this deformity be remedied by an operation which consists in dividing the superior part of the prepuce with the bistoury or scissors, and in dissecting the lips of the wound, when the prepuce is hard, callous, or when it is excessively elongated.

10. *Paraphymosis.*—This accident generally occurs when the prepuce is too narrow, and is drawn rapidly backward to expose the glans, as is seen in the cut No. 16. This not only soon becomes painful, so as

[Fig. 19.]

to impede coition, but inflammatory symptoms are frequently developed to such an extent as to lead to the fear of gangrene. This kind of strangulation is remedied by general bleeding, by pricking the painful spots, the use of baths, emollient cataplasms, &c. The return of the trouble is avoided by the operation mentioned in the preceding case.

11. *Total or partial Deficiency of the Prepuce.*—Beside the malformations just mentioned, the whole or part of the prepuce may be deficient; and this deformity may be congenital, but it is more frequently accidental. When the prepuce is partially deficient, the remnant forms a rounded sac, or kind of cylindrical appendage, varying in length, but which impedes copulation, renders it painful, and requires an operation, which consists in removing the appendage. The same inconveniences do not exist when the prepuce is totally deficient; but it is asserted that when this is the case, and the glans is exposed to the contact of the clothing, it loses a portion of its sensibility. This

circumstance, and perhaps the desire of correcting the deformity, and also the wish not to be suspected of belonging to certain religious sects who use circumcision, have induced persons who were affected with this deformity to have recourse to art ; and history states, that in the time of the Roman emperors, the Jews, in order to evade the vexatious imposts imposed on them, endeavored to efface all traces of their origin, by submitting to an operation for making an artificial prepuce. Celsus has described two modes of performing this ; one of which is applicable to the congenital loss of the prepuce, and the other to that resulting from circumcision. We, however, shall describe only the first, as the causes for performing the second have subsided. In the first case, then, as the skin is very extensible, he advises to draw it from behind forward, and to tie it with a thread in front of the glans, leaving, however, an opening sufficient for the urine ; then to divide it circularly on a level with the base of this part, avoiding the subcutaneous vessels and the urethra ; bring it toward the ligature, and dress the wound until it has healed in such a manner that its edges cannot approximate. The success of this operation, however, is very doubtful, for even in those cases where the result has been the happiest, the factitious prepuce can not present the same formation as the natural prepuce ; and it is almost impossible to prevent erections, which may destroy all hope of cure by breaking the cicatrix. In one case where Petit attempted to reme-

dy a congenital absence of the prepuce in this manner, the edges of the wound approximated, and the circular cicatrix resulting from it formed around the penis a narrow bridle, while the factitious prepuce was changed into a very inconvenient sac.

12. *Abnormal Length of the Frenum of the Penis.* When the frenum of the penis extends too much under the glans, and especially when it proceeds to the orifice of the urethra, the patient feels pain whenever an attempt is made to bring the prepuce backward, the erection is painful, and the penis, in some cases, even curves downward during its rigidity, coition is difficult, and attended with a painful drawing sensation, and the semen is thrown by the emission in a wrong direction. When the frenum is not very firm, it is sometimes broken during a strong erection, or during coition; but sometimes it resists, and then a surgical operation is required. For this purpose, some use scissors, others pass a narrow bistoury flatwise through the frenum, and then turn up the cutting edge and bring it out, so as to detach the frenum from the lower part of the glans. If hemorrhage supervene, it can be arrested by the cautery. After the operation, the prepuce must be kept back by proper dressings, till the small wound is cicatrized.

13. *Abnormal Shortness of the Frenum.*—When the frenum is too short, the glans is drawn downward by an erection, which causes a mis-emission of semen, and renders coition painful. The frenum is often

snapped during sexual congress; but it is sometimes firm, and requires to be divided with the scissors.

It is not sufficient that the penis presents an organization favorable to generation: it must also be endowed with a degree of vitality proper for the exercise of the act assigned to it by nature in the accomplishment of this function. It is thus its excess or want of sensibility may in some cases render the act of copulation unproductive or even impossible. This causes two kinds of sterility, which it is important to know.

14. *Satyriasis.*—This constitutes the first case, and generally speaking, is only transient. The fruit of violent love or excessive passion, it almost always ceases with the possession of the beloved object, and generally speaking, there are few men who are sterile from this cause, after the early acts of marriage. We may mention, however, several persons in whom the sensibility of the penis was always so intense, even in a state of marriage, that the power of the ejaculatory muscles could not overcome that of the erection, which then tends to obliterate the canal of the urethra. Such was the case of the young man mentioned by Schevetel (*Gazette de Santé*, No. 52), who after several years of ineffectual effort, finally succeeded, by a very temperate regimen, in consummating the act of marriage, which excessive power and ardor had hitherto rendered sterile. This was the case also with that Venetian nobleman, whose amativeness was so great that he

consulted several physicians in Europe, and finally found a salutary remedy in the use of leeches, baths, &c., prescribed by Dr. Cockburn. Priapism, or morbid erection of the penis can not be considered as a cause of sterility, as it assumes all the symptoms of an acute inflammation, passing through the different periods with more or less serious symptoms, without, however, leaving any accidents which might affect generation. Priapism may be caused by want of cleanliness, the direct contact and rubbing of flannels upon the genital system, frequent gonorrhœa, nocturnal pollutions, irritation of the urethra by sounds or bougies; chronic inflammations of the skin, especially those affecting the genital organs, flagellation, and a very elevated temperature; the most common cause of it, however, is the taking of cantharides. The same remedies are applicable to the two cases which usually yield to bleeding, warm baths, emollient enemata, camphor, emulsions, &c. Priapism is sometimes cured by compression. This was the case with a young French officer, for whom we advised all the above remedies, in a case where there was priapism, with free emissions nightly, which caused great general debility and nervous excitement. He applied to the penis, on retiring for the night, a bandage, with a buckle at one extremity, and drew it up as far as was necessary, taking several circular turns round the penis. He also compressed the penis with a small wooden forceps of his own invention, the blades of which

could readily be separated, when the swelling of the penis rendered it necessary.

15. *Anaphrodisia.*—As we must study particularly that anaphrodisia which arises from general causes inherent to the individual constitution, we shall treat here only of local anaphrodisia, depending on the diminution or loss of the sensibility of the genital system, in consequence of some circumstantial events. Regarded in this latter point of view, anaphrodisia, which constitutes one of the most frequent causes of sterility, depends on many circumstances to which it is useful to attend. One of the most frequent and fatal is undoubtedly the abusive and premature exercise of the genital organs, especially by excessive masturbation. The penis is wasted by constant titillation, a serous semen is discharged, which has no prolific virtues, and the virile member soon becomes flaccid, resisting all attempts at erection. How many individuals, exhausted by these manœuvres, have vainly sought aid from their impotence, by marriage! Enervated in their intellectual faculties, incapable of the slightest mental effort, they drag out a painful existence, onerous to themselves and to their wives. But let us turn from so sad a picture, to pursue the examination of the other causes of impotence. Who would think that causes exactly the opposite of the preceding might, in some cases, cause the extinction of the genital faculties. It has been remarked that absolute abstinence from venereal pleasures may debil-

itate and finally destroy the action of the sexual organs. This, at least, was the remark of Galen, in regard to the wrestlers who abstained from sexual intercourse with a view to favor their physical development. The case, too, of a saint who devoted himself to the most austere chastity, has also been stated, in whom but slight traces of sexual organs were found after death. In our day, however, extinction of the genital powers, from this cause, is extremely rare.

The influence of different moral situations of man on generation, also, demands the entire attention of the physician; for so close is the connection between the mind and the genital system, that the exercise of one constantly weakens the faculties of the other. In fact, in life there are a thousand circumstances where the soul is devoted to one object, and attracts to itself the whole activity of the nervous system, and renders the senses in a measure mute to the impressions of pleasure and voluptuousness. Man, whose attention is retained for a long time on the same series of ideas, seems to forget even the objects of affection around him; he lives only in the objects of his thought; he is not alive even to the sensation of love; and I do not think it strange that so many men, who have become illustrious in the sciences and arts, have manifested so much indifference to the sex. If the writings of Boileau glow with the fire of the imagination, they are remarkable for their coldness to the female sex. Is it probable that if Newton (who is said to

have died a virgin), had been a prey to the torments of love, his works would have shown so much genius and talent? These examples justify the happy idea of Cabanis, who has compared the sensibility to a fluid circulating in canals, the definite quantity of which diminishes as much in one part as it exists in excess in another. We will here mention an instance in support of this.

M. M———, a magistrate, had been devoted in early life to intense intellectual labors, which had estranged him from male and female society. The most beautiful females had no attractions for him. At the age of twenty-four he had hardly experienced the slightest sensual impression; but at this age having attended, for the first time, the opera of Armida, the acting and music excited in his bosom the feeling of voluptuousness. This night M. M. slept amid all the illusions which such a spectacle could produce upon his senses. He was transported during sleep to the palace of Armida, where he perceives only images which paint to him happiness and pleasure, and finally his senses, which have hitherto been stupefied, inform him that he is a man. Devoting himself anew to his habitual labors, M. M. soon becomes inaccessible to love, until his thoughts are distracted by the society of a lady whose hand he seeks and obtains. M. M. promised himself happiness in this union. But, vain hope! Far from being excited, his senses are only more alarmed at the sight of an object whose charms

would inflame any other person. In short, M. M. leaves the nuptial couch with the shame and consciousness of his impotence. I was consulted under these circumstances, and advised the patient to omit entirely his studies and professional occupation, to indulge in hunting, horseback exercise, and manual employment, especially gardening, which he preferred to every other. Every day the inner part of the thighs was rubbed with the anti-anaphrodisiac liniment (see the pharmacology), the dose of which was gradually increased, and morning and evening the genitals were bathed with an infusion of aromatic plants, to which some drops of tincture of benzoin were added, sometimes substituting for this remedy the asterasic pommade, or douches of Barege on the same parts and in the lumbar region. By this treatment, employed perseveringly for two months and a half, M. M. recovered entirely his virile powers, and became the father of a family.

Other moral causes may oppose the designs of nature in the reproductive act. Some passions cause impotence by the excitement attending them, either because in this case, the emission of semen does not occur, or because it precedes the phenomenon of coition. Other passions, by an opposite effect, strike the genital system with a kind of apathy, and often render the conjugal act impossible. Hatred, jealousy, the dispersion of an illusion, the sight of some deformity, the disgust of a foul breath, deceived hopes, may give rise to anaphrodisia.

The affections of the mind also may prevent coition; but we must admit that they are less incompatible with love than a great many passions, and especially than long and profound meditations. There are even certain affections which seem to excite in the soul the sweetest impressions of pleasure: such are all those which affect the heart, and those which can be softened by tears or friendship. "Love," says Madame Cottin, "the greatest of human felicities, to be vivid and durable, requires that grief should lend it tears: the child of melancholy, rather than of joy, its fires are never move vivid than when lighted in eyes filled with tears, and it can only be eternal when nourished by sadness."

Different hygienic circumstances also may cause anaphrodisia; such as the long-continued use of cooling food, and drinks, fruits, and other substances which may produce a kind of collapse in the genital system. The same is true with the abuse of spirituous drinks; that of coffee, and most of the solaneæ, may have the same results, but it is important not to confound the action of these different substances, as has been done by many authors who have written on this subject; for these latter act in the same manner, as do all these causes which enervate and exhaust by exciting any system of organs.

It has been thought that riding may weaken and suspend the genital functions. Hippocrates attributed the sterility of most of the ancient Scythians to this cause.

Very recently I have been attending a courier of the government, who was affected with impotence after long and uninterrupted journeys.

The human species reproduces in every country, but the feeling which brings the sexes together is far from being the same under different latitudes. Without seeking the proofs of this truth in the people who inhabit the poles and tropics, who differ essentially under this respect, we shall only compare, for an instant, the warmth of our neighbors of Belgium with the vivid ardor of those in the south of France.

The seasons which make climates changeable, also have a remarkable influence on the genital powers. If the spring-time and summer are, as it has been said, the seasons of love, autumn and winter seem to be the periods of repose for the reproductive life in the human species as among all animated beings. This assertion is not only the fruit of analogy; it rests on the tables of births and of population in different countries. Hippocrates had already studied this influence, and thought that the seminal fluid experienced much more alteration as the temperature of the climates is more varied, and the seasons are more irregular: "Plures enim corruptiones contingunt in seminis coarctione, quum tempora frequenter variant quam si eadem sunt et similia." I am ignorant on what points the observation of Hippocrates may be founded: but while we admit that some climates and seasons are more favorable for the union of the sexes,

it is doubtful whether they exercise sufficient influence on the semen to render the conjugal act sterile.* Further, I leave this question willingly to the student of jurisprudence, inasmuch as it presents but a feeble point of contact with the object of this work.

It is difficult to establish general rules of treatment for anaphrodisia, which requires so many therapeutic modifications depending on its different causes. When it arises from frequent emissions of semen, we should try to remove all physical and moral stimuli which might keep up an excess of sensibility in the genital organs, coinciding most commonly with the exhaustion of the individual. Continence, change of air, moderate exercise, succulent diet, abstinence from acrid and stimulating food, should be the first remedies employed. Tissot has advised in these cases preparations of iron with quinine: but I think the physician can not be too careful in the use of these remedies, at least unless the state of exhaustion in the patient is attended with no phenomenon of partial excitement, and even in the latter case it is important to pay some regard to the state of the gastric and pulmonary systems, which

* Dr. D. Davis, in his "Principles of Obstetric Medicine," seems to entertain a different opinion. He remarks: "A respectable lady who has resided for many years in New South Wales, informed the author a short time since, that she had known many instances of females who had ceased to bear children in Europe, becoming the mothers of second batches of children subsequently to their emigration to Botany Bay; adding, that the fact was so notorious, that before she left that country, it was become the subject of current observation at Sydney."

might contraindicate their use. One remedy, which has been freely prescribed, and which seems to us to be peculiarly proper to re-establish debilitated muscular strength, is the exercise of swimming. When by the aid of these hygienic remedies the vitality has been regulated in the different organic systems, and distributed properly to each, and the anaphrodisia is brought to a state of simplicity where stimuli are admissible, great advantages can be obtained from douches applied to the loins along the vertebral column, from frictions around the genital organs with stimulating liniments, and from diffusible stimuli taken internally, being careful to measure the action of these remedies by the degree of excitement proper to give to the genital organs. Need I say that anaphrodisia arising from an opposite cause, that is, from absolute abstinence, will cease by exercise of the genital organs.

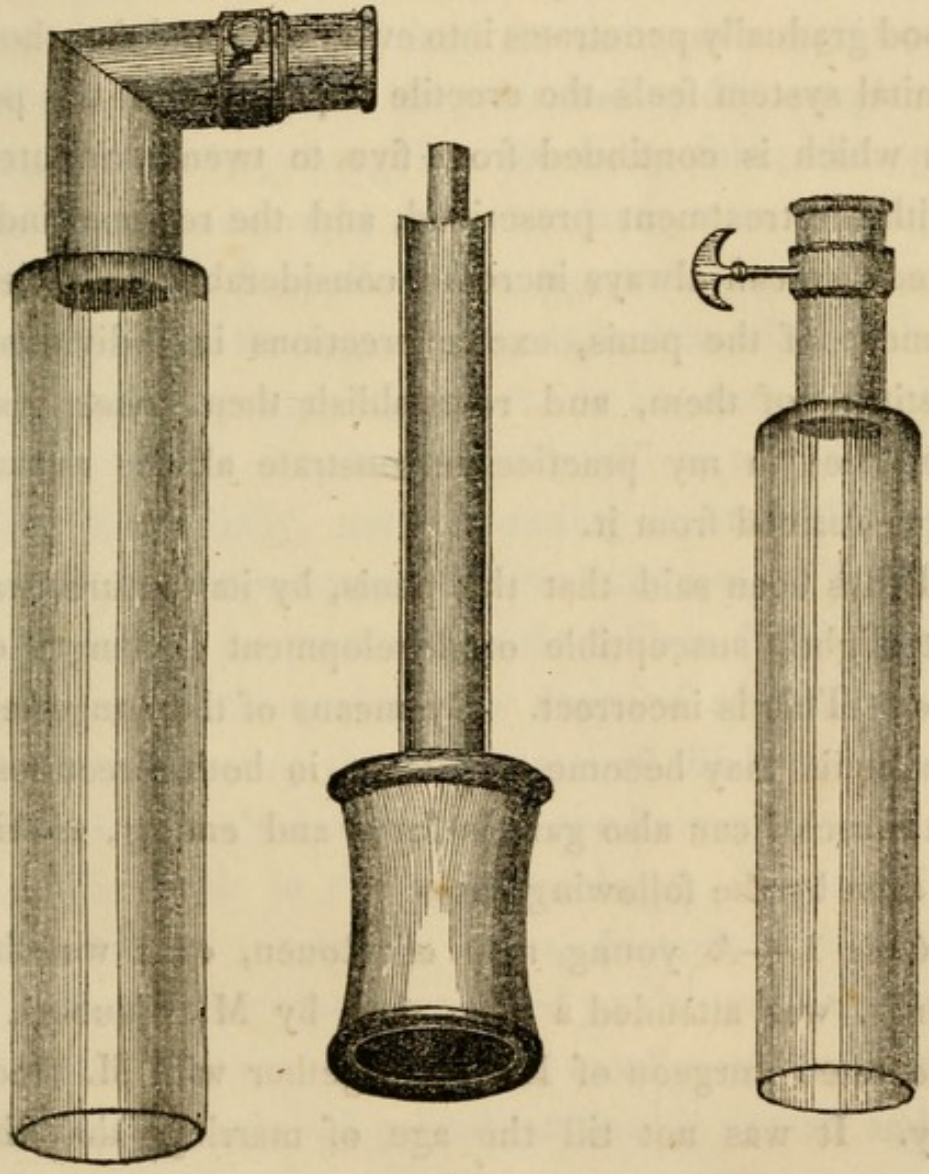
When anaphrodisia springs from trouble of mind, which has absorbed all the vitality devoted to the exercise of the genital powers, we must begin by forgetting all subjects of thought, and by directing the mind to other things. Tissot treated successfully a case of impotence arising from obstinate study, by cold baths, and the use of a powder composed of acidulated tartrate of potash, oxyde of iron, and a small quantity of canella. I have mentioned a case of anaphrodisia from this cause, which yielded to the long-continued use of sulphurous douches, frictions of cantharides, and other stimuli of the genital system; but we must admit that

less benefit is to be expected from these remedies, than from rest of mind added to exercise of the body and senses, in a word from the hygienic and moral remedies proper to divert vitality from the sensitive centre to which the whole of it seems directed. So, too, when anaphrodisia is produced by an imaginary power or any passion, the only mode of relieving it is by modifying the moral impressions. It is a fact, as Montaigne says, that we can find the remedies for imaginary evils only in the imagination. Impotence caused by the long-continued use of alimentary substances termed refrigerants, is cured most generally by food which is both nutritive and stimulant, such as animal gellies, which contain abundance of osmazome, most kinds of fish, and especially their roes, as containing more of the phosphoric principle, the crustacea, oysters, crabs, &c., different vegetable substances, as truffles, artichokes, &c. Beside the employment of the general remedies deduced from the laws of hygiene, and varied according to the nature of the causes of anaphrodisia, there is one class of remedies which seem to excite the genital system more directly, and which, for this reason, are termed aphrodisiacs. This series of medicaments embraces a great number of substances from the natural kingdom, which, if properly used, become a powerful aid after that of the different hygienic remedies; like the latter, however, the aphrodisiac remedies can not be subjected in their employment to any special rules, inasmuch as these depend

on many causes inherent in the disease or the individual, and although we have devoted several pages to the examination of such substances, it is with a view simply to their use by proper hands. (See chapter on Remedies.)

Finally, there is another class of remedies to which art, in some cases, may have recourse to increase the turgescence of the penis, and fit it for sexual purposes. I allude to certain mechanical instruments or appara-

[Fig. 20.]



The Congester.

tus. For this purpose I have invented an instrument called a *congester*, cylindrical in form, from five to eight inches long, and from ten to sixteen lines in diameter, the extremity of which is free, while the other is so arranged that an exhausting pump can be attached to it. The penis is introduced into this cylinder, being careful to draw the prepuce backward: the instrument is directed upward. The congester is held with one hand, while the other hand works the piston to create a vacuum, and the corpus cavernosum soon swells, the blood gradually penetrates into every part, and the whole genital system feels the erectile impression of the penis which is continued from five to twenty minutes. With the treatment prescribed, and the regimen indicated, we can always increase considerably the development of the penis, excite erections in individuals destitute of them, and re-establish them when lost. Instances in my practice demonstrate all the advantages derived from it.

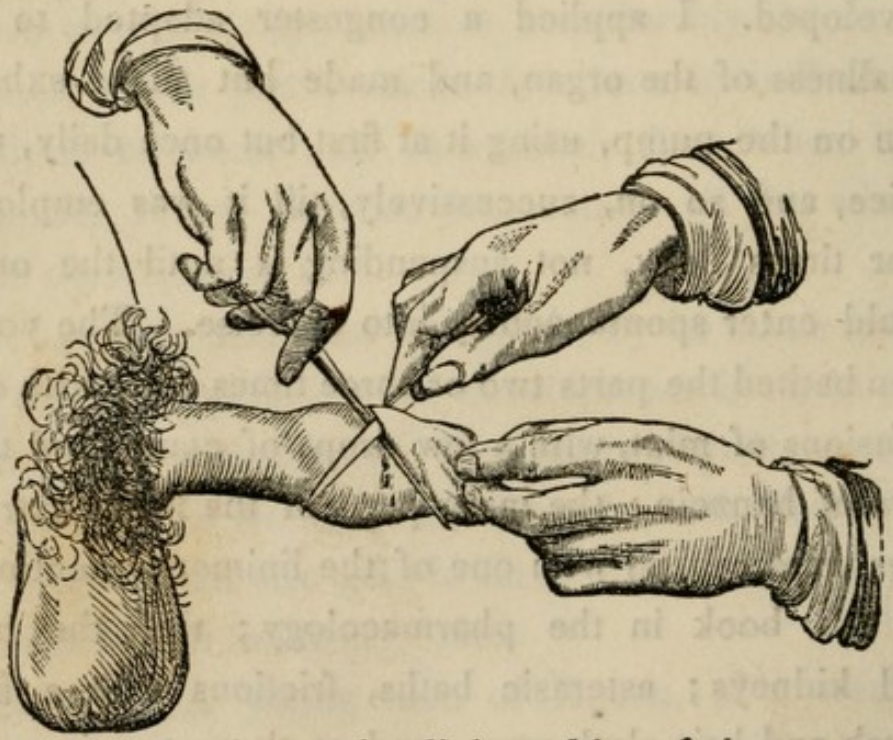
It has been said that the penis, by its texture, was but slightly susceptible of development in length or size. This is incorrect. By means of the congester, the penis may become very large in both directions; the muscles can also gain in force and energy, as will be seen by the following cases.

Case 1.—A young man of Rouen, of a wealthy family, was attended a long time by M. Flaubert, a celebrated surgeon of Rouen, together with M. Godfroy. It was not till the age of marriage that the

health of this young man improved, although the utmost care was bestowed upon him. Until this period he exhibited no signs of virility: nature had entirely denied her favors to him. The penis resembled a large wart; the prepuce was fitted tightly to the glans, about eight lines long, flaccid in every part; the central canal was very narrow; the right testicle was closely embraced by the scrotum, the left testicle the size of a nut, formed a tumor near the ischiatic notch; the voice was acute, resembling that of a young female; there was no hair on the pubic region; the skin was white and hot; he had a dry cough; the pulse was very irregular, the body thin; the spinal column was curved; the muscular system but slightly developed. I applied a congester adapted to the smallness of the organ, and made but slight exhaustion on the pump, using it at first but once daily, then twice, and so on, successively, till it was employed four times daily, not suspending it until the organ could enter spontaneously into exercise. The young man bathed the parts two or three times daily with cold infusions of mint, with a few drops of compound tincture of benzoin; the inner parts of the lower extremities were rubbed with one of the liniments mentioned in this book in the pharmacology; then the back and kidneys; asterasic baths, frictions with a flesh brush and hair cloth were used at the same time with a tonic regimen. After five months of treatment, I found the penis had gained ten lines in extent, and the

diameter had increased in the same proportion, natural erections commenced, the urine ran more freely, the glans was more uncovered; as the prepuce impeded the extension of the corpus cavernosum I determined to subject my patient to the operation for circumcision, which was performed, as recommended by Ricord, viz., by drawing an inked line on the skin of the prepuce, corresponding to the base of the glans; the prepuce was drawn forward, and the inked part was held firmly by an assistant with a pair of forceps. Then the surgeon takes that part of the prepuce projecting beyond the forceps with his left hand, and with a bistoury cuts the prepuce at the inked line with his right.

[Fig. 21.]



When this is done, the lining skin of the prepuce, which can not be drawn forward, remains entire, and covers the glans; this lining is divided by a single cut

with the scissors; next the flaps are removed round to the frenum, and then the two flaps are held together and cut off, with the frenum, at one cut. The mode of holding the prepuce, &c., is seen in the cut.

This operation was long and painful, as it was necessary to dissect the inner skin of the prepuce, from its attachment to the glans. I carefully avoided touching its envelope, preferring to leave the granulations, at the expense of the penis. This young man bore the operation courageously—he desired so much to acquire his genital faculties. In twenty-five days, the cicatrization was complete—the granulations were destroyed with alum and the lapis infernalis.

Two months after this operation, I again resumed the use of the congester with the treatment, which was modified according to the indications. The penis was readily developed; the blood flowed freely into the corpus cavernosum; the canal of the urethra presented its normal dimensions.

About the third month, the penis had enlarged twenty-two lines, which, with the ten lines gained before, made an extension of thirty-two lines. The right testicle and spermatic cord of that side were manifestly larger. By slight pressure on the left testicle, and by repeated exhaustion over this gland, it was much depressed, and was entirely disengaged from the inguinal notch. Finally, natural semi-erections supervened, which afterward became more free, and then frequent inclination to masturbation. Notwith-

standing my counsels, this wish was irresistible, and was always followed by a free emission. In twenty months, the penis had elongated thirty-seven lines, and its diameter was increased eight lines. This treatment gave great muscular development; all the organs increased remarkably; the dorsal column became righted; the voice acquired a graver tone; hairs appeared on the penis; and there were some signs of a mustache, &c. We must remark that all the hygienic principles were strictly observed; the patient rode every day on horseback, practised gymnastic exercises, in which he has now become very skilful. A year since he was married, and he has already a family.

Case 2.—A young man, of Lille, twenty-two years old, of delicate constitution, thin and tall, devoted himself early in life to study; he left college, entered the Polytechnic school, and applied himself devotedly to mathematics. In his infancy, he had frequently been troubled with bleeding from the nose, which exhausted him, and forced him to suspend his studies. Rest of mind, fresh air, pediluvia, &c., produced a good effect. The assimilative functions reappeared in a short time, and terminated the exhaustion caused by nasal hemorrhages, which were renewed as soon as the brain resumed its activity. The study of mathematics brought it on again; and further, he contracted a very intense bronchitis. He had leave of absence for several months. Prof. Marjolin, his

physician, by a rational plan of treatment, succeeded in re-establishing his health. Hitherto, this young man had paid no attention to the genital organs, which were wasted, and almost invisible. M. Marjolin gave him wise advice on this point also, which, however, was of no benefit. He applied to me. The bronchitis had disappeared; the hemorrhage reappeared on the slightest mental and bodily fatigue; there was frequently suffocation when going up stairs, or on quickening his walk; the pulse was full, and sometimes there were palpitations. The face was alternately red and pale, and every fifteen or twenty days, it was necessary to apply twelve, fifteen, or twenty leeches to the anus; he was cauterized on his left arm. The penis was small, flaccid, three inches two lines long; the testicles small, of the form of a filbert, the spermatic cord long and thin, and the urethra was so narrow, that it required a long time to urinate.

M. J., when seventeen years old, had some semi-erections, but for several years had been impotent, and he had felt no desire. His lower limbs were rubbed with an anti-anaphrodisiac liniment, and he used also warm baths, with alcoholic tincture of ginseng and ambergris.

The application of the congestor, although made very carefully, caused severe pains. The cellules of the corpora cavernosa opened with difficulty. It was necessary to employ for a long time local and unctuous baths, slight frictions of warm water, rendered

more active by aromatic liniments, over the whole genital system, and also emollient fumigations.

The application of the congestor was almost always painful, as the blood penetrated with difficulty into the corpus cavernosum. With patience and perseverance I succeeded, after six months of treatment and erective exercises, in developing the corpus cavernosum as far as the glans. I applied the erector; in a few weeks I obtained the desirable dimensions. I returned to the usual congestor, which I changed as the genital organs increased in dimensions. The treatment was attended with proper regimen and exercises. The health was invigorated. In the third month, hemorrhoidal tumors appeared, from which much blood was discharged. After this time, there was no bleeding from the nose; and from this time, there was more regularity in the functions, and erections commenced, which increased imperceptibly. At the tenth month, the penis had gained an inch and a half in length, and its diameter had nearly doubled. The urethra was much enlarged, the urine flowed freely, and the testicles, too, had become very large. At this time, the erections were nearly complete, and several seminal emissions occurred at night, after marked erections.

After passing through the severe winter of 1829 without any change in health, except from the effects of cold on the bronchiæ, his treatment was resumed. Full erections were developed, by applying the congestor. But his natural timidity, his distrust of his

virile powers, and his mortification at using this instrument to develop the penis, retarded his convalescence. He finally renounced the instrument. When he was fearful of not fulfilling the calls of nature, two or three spoonfuls of the anti-anaphrodisiac syrup, some baths, followed with frictions of the anti-anaphrodisiac liniment, increased the copulative power. Now M. J. is an engineer, in good health, uses no stimulant, and fulfils very well his marital functions.

Case 3.—Count Ant. de R., a Russian, twenty-three years old, of a strong constitution, and very muscular, applied to me for advice in regard to his genital system. He stated that he had never had an erection; that he was on the point of being married, but was fearful that he could not fulfil the duties of marriage. On examining the genital system, I found the testicles well formed, though small, near the root of the penis, and very much compressed by the scrotum. The penis, when flaccid, measured only an inch, and had the appearance of a large tubercle.

Treatment.—Diminution of food, gradual relinquishment of wine, liquor, and coffee; moderation in bodily exercise; vapor baths as far as the kidneys semi-weekly; diuretic drinks, sweetened with the anti-anaphrodisiac syrup; the application of the congestor, which in two months caused complete erections; asterasic frictions to the kidneys; and sleeping on straw. After using the congestor for sixteen months, the penis gained sixteen lines. Finally, after

two years of treatment, the penis measured, when flaccid, two and three quarter inches, and when erected, four inches ten lines. The erections were full and free; the exercise of coition occurred, and with perfect success; the seminal emission was abundant. The count has since been married, and has had three children.

Case 4.—The son of Lord B. sent for me to come to London, in 1826, to examine his genital system. He was thirty-three years old, tall, and remarkably fat; and fond of eating and drinking. His genital organs presented the following state: The right testicle was very large; the left was small, situated near the penis, and was not visible externally, but felt like an excrescence. The treatment was nearly the same as in the preceding case. In twenty-seven months, the penis was developed to three inches and four lines. At this time, erections were not complete, except by the use of the congestor; the patient then indulged easily in coition. He was enabled to dispense with it when not fatigued by excesses at table.

It is useless to mention a greater number of cases on the same subject; those already narrated, will suffice to draw the attention of practitioners to this point, and induce them to pursue the same plan of treatment in similar cases.

I have proceeded in other cases, where the genital functions have been lost (and which have been regarded as incurable, from the idea that no treatment

and no hygienic or mechanical remedy could produce any vital or organic modification in the tissues of an organ, whose physiological functions were entirely extinct), by a combination, a succession of remedies, and unexpected success has crowned my efforts. Thus I have used, alternately, dry cups and cupping, moxas, cauteries, rubefacients, the vapor of liquids, flagellation on the lumbar, glutœal, and perineal surfaces, but particularly shampooing and malaxating, which are very powerful. I have thought proper to mention the advantages of this, here, and have therefore devoted a few lines to this subject. Since the publication of the last edition of this work, I have been sent for to England, Germany, and latterly to Vienna, and Tuscany, to give advice to persons affected with anaphrodisia, and difficult and obstinate cases have obliged me to use a part of the means indicated, and I have derived the utmost benefit from shampooing.

Of Shampooing and Malaxation.

Shampooing and malaxation are performed on all the tissues of the organization, to excite and give activity and tone to the parts subjected to its action. Shampooing consists in pressing with the fingers the cutaneous surfaces, the muscles, and nerves, following the fibres as nearly as possible.

From the Levant, Persia, and India, our first ideas of shampooing have been derived. In these countries, there are persons who have served a regular ap-

prenticeship, to know how to excite, invigorate, and restore the sensibility and contractility of the organs, in order to re-establish their functions. These men have long thin fingers, and the last phalanges are very slight, and push through the tissues with admirable address. They distinguish readily the feeble or diseased fasciculi. It does not enter into our plan to present the complete history of this treatment, nor to make known all the advantageous results to be derived from it, which I had occasion to notice in Turkey. But we shall state here the numerous benefits which arise from shampooing and malaxation of the genital system, in some cases of anaphrodisia. The following is the course to be pursued: The surfaces being shaved, they are rubbed with a brush, or coarse stuff; we begin by shampooing lightly the integuments which cover the muscles of the genital system; this operation is made more active until the excitability of the individual is sufficiently great. The patient then rests for a few minutes; the shampooed parts are lubricated, and the muscles are then attacked; at first, they are shampooed lightly, according to the direction of their fibres; they are then malaxated until the patient feels severe pain. Frictions, with liniment or pommade, described in our pharmacology, are then used. When the fingers are not sufficient to penetrate the interstices of the muscles, I arm them with a prolongation of very firm leather, flattened in the form of a scraper, kept in place by a glove fixed around the wrist.

Each shampooing should be more or less prolonged, according to the degree of sensibility or excitability of the individual. It may be repeated once or twice a day, daily, or every two days. It is not till the parts which contribute simultaneously to the erection of the penis have been subjected to the action of shampooing, that we act on the envelopes of the testicles, the cord, and sometimes the testicles. Three instances, taken from a great many practical facts, will suffice, I hope, to show the results of shampooing and malaxation, employed simultaneously with substances which act specially on the genital system, and with the congester.

Case 1.—The Landgrave of ———, aged more than fifty years, thin and tall, had been affected with anaphrodisia for more than eighteen years, which supervened in consequence of excesses at table, in hunting, and in venereal pleasures. The virile powers were nearly extinct, and had disappeared entirely. The prince married a young woman with whom he was desperately enamored, but could not ratify his marriage vows. He consulted in turn the most celebrated practitioners in Europe, followed several plans of treatment, used electricity and galvanism, but without any aphrodisiac result. The celebrated Hahnemann was sent for: he prescribed his wonderful drops, termed by his followers the ambrosia of the gods, but without producing the slightest action on the sexual organs. This gentleman was recommended to me by

Prof. Hevercking, physician-in-chief to the grand duke of Hesse Darmstadt. On his arrival at Paris the prince was affected with intermittent fever contracted in Holland. In three months and a half his health was restored by proper hygienic treatment. About the end of May, 1833, we proceeded to the anti-anaphrodisiac treatment. An examination of the genital system disclosed the following characters: the penis was long and flabby; the tissue of the corpus cavernosum was compact and firm to the touch; the testicles were thin and small, enclosed in a loose scrotum, not tender on being touched; a varicocele on the left side, and the genital muscles were but slightly developed; the bladder was inert; the urine ran slowly, and sometimes it was necessary to pass a sound: the feces were dry, always passed with difficulty, and costiveness frequently continued for several days.*

Treatment.—The patient was first subjected to dry frictions, especially on the dorsal surfaces to the lower part of the thighs; then all the parts were rubbed with flannel moistened with anti-anaphrodisiac liniment. The body was afterward covered with coarse red flannel.† He walked and rode out, which produced gen-

* It is remarkable that most individuals affected with anaphrodisia are costive; the rectum is inert; the sphincter is so contracted as to cause constipation, sometimes for eight, twelve, and even fifteen days. The effect of shampooing removes this, which is sometimes attended with bad results.

† I am ignorant why *red* produces a more marked action on the skin, than any other. The Irish, Dutch, and Danes, assure me that red will prevent and cure rheumatism.

tle perspiration. I began the shampooing on the spinal and the dorsal muscles, following as far as possible the direction of the muscular faciculi; the buttocks were then subjected to the same action, and also the muscles of the thighs for twenty-five days. All these parts were shampooed and malaxated once or twice daily. Every four days the prince took an asterasic bath at 24°. After five days of rest, the shampooing of the lumbar and the gluteal muscles were continued. The six muscles of the genital system were shampooed very carefully; the shampooer introduced one finger into the rectum, and acted on the sphincter and levator ani muscles, which it is known embrace the seminal vesicles; the other muscles were also shampooed, as likewise the prostate gland, the testicles, scrotum, and lastly the corpus cavernosum and the glans. All these parts having been malaxated nearly twenty days, I applied the congester on the penis, which in time restored the turgescence of this organ, and caused it imperceptibly to assume its normal development. Ten months were required to fill all the cells of the corpus cavernosum, some of which adhered so closely, that there was danger of rupture by forcing the tissues with the instrument.

The prince lay on a straw bed: he also took the anti-anaphrodisiac syrup, and soon began to feel in the night an unusual degree of heat in the sexual parts, which became congested with a slight degree of effort, and involuntarily toward morning the blood penetrated

readily into the genital organ, and incited to sexual intercourse. Free discharge of semen indicated great activity in the testicles, which were manifestly developed; the health was perfect. When the erection was imperfect, the congester was used, which readily produced the necessary development of the penis.

Case 2.—A rich landholder of Paris, aged sixty-six years, of a lymphatic constitution which had been well taken care of, and free from infirmities, had been a widower for seventeen years, when he was smitten with the charms of a young lady, and attempted to marry her. For a long time M. D. had refrained from the use of the genital organs, hoping that rest of the genitals would preserve his virile powers. About two months before his intended marriage he ascertained that he was impotent. Prof. Marjolin, whose advice he solicited, prescribed for him a regimen and course of treatment which he did not follow long enough to derive any benefit from it. Prof. Roux was also consulted, and he prescribed thermal douches to the perineum, but the impatience of M. D. caused him to reject all treatment. He married, hoping his young wife would restore him. Vain hope! The lethargic torpor was always the same. Grieved at his position he again applied to Marjolin, who referred him to me. The sexual parts were well formed but soft and flabby, and perfectly inert. The malaxating and shampooing were used as in the preceding case, and also a proper course of diet and regimen. M. D., however, was

very impatient, and imagined that everything ought to yield to his wealth. Instead of hastening his recovery he impeded it. After ten months of very difficult treatment, the congester produced turgescence of the genital organs. The muscles in the perineal region were still very feeble, and the reproductive act could not be performed except by the aid of the rectal cylinder, which, by acting kindly on the muscular apparatus of the genitals, and by exciting and pressing directly and indirectly on the seminal vesicles, gave tone to all the parts while the instrument rendered the erection of the penis complete: M. D. now fulfilled the genital act, and fifteen months afterward his wife became a mother.

Case 3.—Baron Suisse, a young man, thirty-three years old, tall, muscular, and in excellent health, was subject to strong venereal appetites. But at the age of sixteen years he was obliged, by religious motives, to restrain his amorous desires: his erectile powers gradually diminished, and finally were entirely lost. When twenty-four years old, he married a beautiful lady to whom he was much attached, but was astonished to find himself impotent. He consulted several physicians, and tried numerous remedies, but unsuccessfully. He was so desperate at his cruel situation, that he resolved several times to commit suicide. He came to consult me, and upon my positively assuring him that I would restore him, he placed himself under my guidance.

This was his situation: The genital organs were well formed, a little wasted from want of exercise, the testicles were large and hard, and often became painful from immoderate exercise on horseback, which contributed to keep up the atony of the perineal muscles. His health otherwise was good.

Treatment.—Cessation of horseback exercise, diminution of a too nutritious diet; sleeping on a hair mattress; general and local frictions, and with substances to excite special stability in the genital system; the use of the congester, to bring blood to the organ. Slight erections imperceptibly came on, but not with force enough to permit coition, because the erector and ejaculatory muscles participated imperfectly, and but little in the turgescence of the genital organ. I now used shampooing, which soon manifested its good effects, and then the genital system attained its normal dimensions, and free seminal discharges indicated great activity in the organs. Baron de Suisse is now the father of five children.

Influence of the Cerebellum on the Generative Functions.

In some cases of obstinate anaphrodisia, I have applied remedies to the neck, and particularly to the occipital protuberance, from which I have derived great benefit, either by malaxating the integuments and muscles covering these parts, or by the use of anti-anaphrodisiac pommades, which cause irritation and

inflammation, sometimes producing free suppuration; sometimes, too, some flying blisters are sufficient to excite or quicken the virile powers. In other cases, I have used cups, moxas, and cauteries, which I have found useful.

In priapism, satyriasis, hysteria—the results have almost been constant by the immediate application of leeches to the occipital protuberance, the bites of which are covered with a thick emollient cataplasm; in some cases, cold acidulated lotions, and even of snow or ice, have subdued neuroses of the genital system.

We find in the Bulletin des Sciences de Medicine of Bologna, in July 1838, two cases under the term—"*Casi comprovanti l'influenza del cervelletto sulle funsioni delle parti generative.*"

Case 1.—This was the case of a female, aged about thirty-five years, and who was extremely amorous. She was struck violently on the head by a large limb of a mulberry tree, and fell to the earth senseless. She remained some time without aid, but gradually became sensible, and went into the house. Some days after this accident, she felt a disagreeable and even painful sensation in the vulvo-vaginal passage, whence there was a slight discharge of whitish matter. She remarked that when the pain in the vagina ceased, a severe pain came on in the neck, precisely in the spot struck by the limb of the tree. She was extremely reluctant to indulge in sexual intercourse. Dr.

Cittarelli bled her freely from the arm, recommended emollient semi-baths, diet, and diluent drinks. He prescribed two applications of leeches to the neck; finally, on the fifth day, he ordered frictions on the occipital protuberance, with a liniment containing tartar emetic, which produced severe inflammation, and terminated by profuse suppuration.

The vaginal discharge and pain disappeared entirely, and finally the reproductive functions resumed their former sensations. This female now enjoys perfect health.

The second case was that of a man forty years old, who had severe inflammation in the testes, the cause of which he attributed to sexual desire; he had already experienced the same disease. The scrotum was swelled, hot, and painful. The physician who reported these two cases, detected an orchitis, which resulted from a great accumulation of semen (spermatocele). He prescribed copious bleeding, warm baths at first, making them cold afterward, and tartarized lemonade for drink. The patient deriving no advantage from this treatment, twelve leeches were applied to the nucha, which were very beneficial to him. The diseased parts were bathed in snow water, uninterruptedly, for fifteen days; and at the same time the nucha was rubbed with the liniment of Autenreith. These means were soon followed by the complete resolution of the inflammatory tumor of the testicles.

§ II.—DISEASES OF THE ORGANS OF SECRETION.

1. *Absence of the Testes.*—The absence of the testes from the bursæ can not be considered a cause of sterility, for they are sometimes retained in the abdomen for some years, and sometimes, even through life; and this, although the individuals presenting this arrangement are equally prone to fecundation; and it has even been remarked that this formation renders the venereal desires and the secretion of semen more active.

The loss of a testicle does not necessarily imply the loss of the generative power, inasmuch as this circumstance, of which we have but a few well-marked examples, seems to be attended with a hypertrophy of the remaining testes. According to Blumenbach, the Hottentots are said frequently to deprive their sons of a testicle on arriving at eight years of age, from the belief that this renders them swift runners.

Those whom nature has deprived of both testes are certainly sterile. Cases, however, have been cited, where those who have been castrated, have begotten children soon after the loss of the testes. Cabrol has stated the case of a soldier condemned for rape, in whom, after death, could be found no trace of a testicle, neither in the scrotum, nor in the abdomen. But these facts are far from being authentic, and it is extremely rare that nature, so attentive to the phenomena

of reproduction, forgets the formation of organs which are specially designed for it.

2. *Wasting of the Testes.*—Long-continued compression, absolute continence, and the advances of age, may waste the testes so as to destroy their functions. Instances of this accident, which, however, are rare, are found in Hippocrates (*De aere, aquis, et locis*) and Galen (*Quest.* 46). Individuals exposed to exhalations of lead have also presented this peculiarity. (*Traité de la Colique metal., par F. W. Merat.*)

When the wasting of the testes does not result from any organic defect, we may hope for a cure by the use of stimulating liniments, as those of ammonia and cantharides, by aromatic embrocations, by the removal of the causes which have determined it, and especially by the exercise of the wasted part, when it arises from long-continued continence.

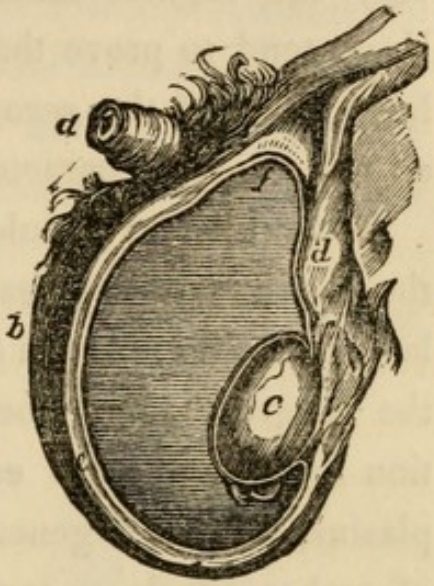
3. *Adhesion of the Testes at the Suprapubic Ring.* It may happen that the testes, on leaving the abdomen, are retained in the inguinal ring, and there contract more or less intimate adhesions, which cause them to waste and disappear. This circumstance may also cause their strangulation, and M. Richerand has likewise reported a remarkable instance of it. Prof. Dupuytren has seen the same accident, some years since, in an adult subject. The operation performed by this skilful surgeon was so successful, that the patient recovered his health and his virile powers. I do not, however, think it right to attempt the operation in case

of simple adhesion of the testicle, even if the impotence attending it should resist every remedy.

4. *Hydrocele.*—This disease, which Boerhaave recognises as a cause of sterility, and which is seen in the cut, does not seem to impair generation, except by

[Fig. 22.]

The scrotum largely distended.



The scrotum distended to its utmost extent, and the position of the fluid shown.

changing the natural dimensions of the penis, for no observation has yet shown that the secretion of the semen is altered.

5. *Sarcocele and Hydro-Sarcocele.*—This is not true of sarcocele and its complication with the preceding disease: for beside that these two affections render coition more or less difficult, they may give rise to sterility by the derangement they cause in the secretory action of the testicles: this circumstance, however, can not necessarily cause sterility unless the two

testes should be affected at the same time; for the coition may be productive of the secretion of semen, and take place on one side. Instances have been mentioned also of individuals who retained their sexual prerogatives although affected with a double sarcocele. M. Marc thought that in this case the disease affected only the vaginal tunic: but some facts related by Roux tend to prove that it is situated only in the cellular tissue of the scrotum, although it there presents all the external characters of sarcocele.

Reason alone should dictate the means to obviate the inconveniences resulting from scrotal tumors so large as to impede the generative act. Art may arrest the progress of the beginning of a schirrous induration by sanguineous emission, baths, emollient cataplasms, and other general means; but as the existence of real sarcocele or cancer of the testicle must necessarily render sterile the individual affected with it, there is no other remedy for it but the knife.

6. *Spermacocele.*—This is less a cause of sterility by itself than by the circumstances which produce it. Thus, in fact, engorgements of the epididymis, prostate gland, vesicles, or canals, which carry the seminal fluid, generally cause this affection.

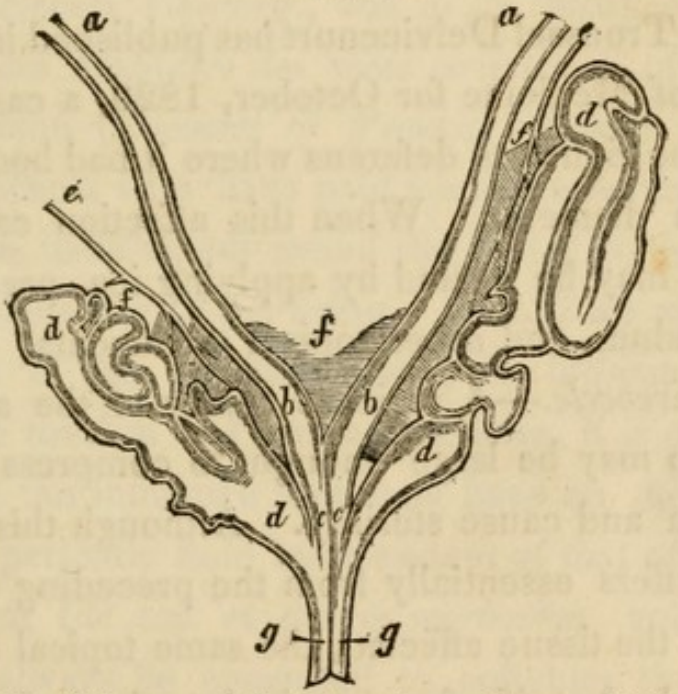
If it were possible to conceive of continence so prolonged as to cause this symptom, the first remedy would doubtless be to excite the emission of semen; but as the disease is usually symptomatic, we must try to remove the causes by the different remedies for

each. (See diseases of the vasa deferentia, urethra, &c.)

7. *Ossification of the Testes.*—The osseous transformation of the testes is not very rare in persons advanced in life, and have been detected several times in adults after schirrous induration of these organs, and even too in young men who had scarcely attained the period of puberty. Prof. Dubois castrated a young man eighteen years old, whose testicles were entirely ossified in the centre. This accident, which necessarily causes sterility, is incurable.

8. *Obstruction of the Vasa Deferentia.*—I am not

[Fig. 23.]



a, *a*. Portions of the vasa deferentia, whose sides are thick, and cavity very narrow. *b*, *b*. Portions of the same canals, with less thick sides, and larger cavity. *c*, *c*. Extremity of each vas deferens, grows narrow again where it unites with the vesiculæ seminales and the ejaculatory canal. *d*, *d*. *d*, *d*. Vesiculæ seminales inflated. *e*, *e*. Their arteries. *f*, *f*, *f*. Portion of the peritoneum covering the posterior part of the vesiculæ seminales. *g*, *g*. Ejaculator canals.—(Graaf.)

aware that pathological anatomy has yet noticed this morbid state. If, however, we bear in mind the length, tortuousness, and excessive smallness, of the vasa deferentia, as seen in the cut, especially from the epididymis to their entrance into the abdomen, we can readily conceive of the possibility of their obliteration. I have suspected it more than once in those individuals who after several inflammations of the testes and spermatic cords have remained sterile. Art has as yet found no cure for this.

9. *Dilatation and Relaxation of the Vasa Deferentia.*—There are several instances of this phenomena attending a sensible diminution of the excretion of semen. M. Troussel Delvincourt has published in the new Journal of Medicine for October, 1820, a case of disease of the right vas deferens where it had become two inches in diameter. When this affection can be detected, it may be treated by applying ice, preparations of lead, alum, and other topical astringents.

10. *Circocele.*—A varicose tumor of the spermatic veins also may be large enough to compress the vasa deferentia and cause sterility. Although this circumstance differs essentially from the preceding as to the nature of the tissue affected, the same topical remedies are useful; but if after employing them for a long time, the tumors are large enough to arrest the excretion of the semen, we should not hesitate to remove them, as was practised by a surgeon in a case stated by Dr. Mouton (*Dict. des Scien. Med.*, vol. v.)

The list of diseases of these organs might be still more enlarged; those, however, already mentioned, are the principal ones, for which the attention of the practitioner and the remedial agents of the materia medica will be most frequently solicited. Further information can be obtained by reference to Sir Astley Cooper on the Testes, and other surgical books with which our language has recently been enriched.

§ III.—DISEASES OF THE ORGANS OF EMISSION.

1. *Special Lesions of the Prostate Gland.*—No one has as yet studied the diseases of the prostate gland in respect to sterility. The researches of Desault (*Œuvres Chirurg.*, vol. iii., p. 220), of Chopart *Traité des Maladies des voies urinaires*), of Sir Everard Home (*Diseases of Prostate Gland*), and many other authors who have paid special attention to these maladies, have simply stated the obstacles they present to the excretion of the urine. Still, if we recur to the position of the prostate gland, its intimate relations with the urethra and seminal vesicles, it is easy to appreciate the influence they may have on the emission of the spermatic fluid independent of that of the urine. Morgagni (*de sed. et causis morborum*, vol. ii.), who should always be consulted to enlighten the most obscure points of medicine, has collected on this topic the facts most in support of this truth. Thus he has found, by examining the bodies of several individuals who had been affected with retention of semen during life, engorgements of the prostate to a greater or less

extent, schirrous and cartilaginous indurations, calculous concretions, &c. We know, however, that these different lesions can not impair the function of generation, except by exercising a mechanical action on the passages through which the seminal fluid is transmitted. For in the actual state of the science, we can not point out in what manner the defects in the secretion of the prostate gland are causes of sterility any more than we can determine the part taken by the functions of this gland in the generative process.

It is not always easy to ascertain during life the nature of the alteration which impedes the emission of the seminal fluid: we can, however, fix with some degree of certainty the diagnosis of any swelling of the prostate gland by the symptoms which emanaet from the simultaneous derangement of the excretion of semen, urine, and feces, and to the difficulty of introducing into the bladder a sound which can readily be inserted as far as the prostate gland.

Desault has also mentioned as a symptom of the varicose engorgement of this gland, the slowness attending defecation, the indolence of the tumor when it is compressed with the finger introduced into the rectum, and the absence of chills when the urine passes through the canal.

There is no particular mode of detecting schirrous and cartilaginous indurations of the prostate gland unless the swelling be so great that it may be felt by introducing the finger into the rectum.

It is still more difficult to distinguish the presence of calculous concretions in the body of the prostate gland, or in the ejaculatory ducts, because they are generally so small as not to increase the size of the gland.

The difficulty of establishing rules of treatment necessarily depends on that of the diagnosis, or degree of alteration in the affected organ. When the tumefaction of the prostate gland appears to be simply the effect of the varicose engorgement of the vessels of this part, we may treat it with some degree of success, by keeping the patient in the horizontal posture, added to the introduction of gum elastic sounds, the calibre of which must be gradually increased. The vessels are disgorged directly by applying leeches to the anus, while at the same time a new afflux of blood to the part is prevented by applying cold solutions of acetate of lead to the region of the perineum; the bowels should be kept free by small cold enemata, being careful to avoid all efforts, which might impart to the abdominal circulation an impulse tending again to favor the engorgement.

It is much more difficult to remedy schirrous and cartilaginous indurations of the prostate gland, so far as sterility is concerned, when the ejaculatory passages themselves take part in the affection. Nevertheless, after using sounds of gum elastic to preserve the continuity of the urethra, we may employ, with some prospect of success, especially if the disease be re-

cent, mercurial frictions on the region of the perineum, plasters of hyosciamus and belladonna, solvents taken internally, baths, and other general remedies; but we can imagine that if the swelling of the prostate gland be attended with the adhesion of the parietes of the ejaculatory passages, sterility will be the necessary consequence, and will be incurable. For calculi in the prostate, it is difficult to use other remedies than the employment of general means, especially baths and emollient cataplasms to the perineum. These not only allay the severe pains and inflammatory symptoms which usually attend this disease; but if employed with perseverance, the calculi may be discharged from the urethra, and these foreign bodies have often been found at the mouth of the ejaculatory passages. M. Nauche has published the case of a literary gentleman who, after experiencing for four months all the symptoms arising from the presence of foreign bodies in the prostate gland, was completely relieved after passing several calculi from the urethra.* In cases where these calculi project in the perineum, the same author recommends their extraction by cutting on the tumor. But, perhaps, in these cases we might follow the advice of Desault, that is, to operate in the manner indicated for the extraction of the vesical calculi, lest there might be an error in the diagnosis.

* *Diseases of Bladder and Urinary Passages:* in which this author has thrown light on several important questions.

2. *Diseases of the Verumontanum.*—Every one is familiar with this kind of uvula of the urethra, situated behind the oblique orifices of the ejaculatory ducts, those of the prostate, and the glands of Cowper. It establishes a valve to prevent the reflux of their fluids into the bladder, at the moment of emission.

Some females, in order to prevent impregnation, exercise a very strong pressure above the valve of the urethra, at the moment of emission, so that the valve yields, and the fluid enters the bladder instead of flowing through the urethra, and the semen follows a false direction. This cause of sterility is very serious, and difficult to cure. Since the last edition of this book, I have seen eleven cases of this character. The erections were more or less complete, but there were no emissions. There is but slight sensation of pleasure in this deplorable condition, which transforms the man into the eunuch. The mechanical remedies have not always obtained the success I desired. Generally, however, after a long and difficult course of treatment, there has been a more or less perfect seminal emission by the use of a pad fixed behind the prostate.

The diseases of the verumontanum are most commonly coincident with those of the prostate gland. They may appear, also, independent of these latter, especially after repeated or badly cured blenorrhœas. The diseases which may occur under the influence of

such causes, and which it is important to study specially, in regard to sterility, are the *engorgement* and *induration* of this part.

Morgagni, de Blegny, and Sir Everard Home, have reported instances of sterility, arising from these two kinds of alteration, which depend almost constantly on the obliteration of the orifices of the ejaculatory ducts. De la Peyronie (*in the Mem. de l'Academie de Chirurgie*, vol. ii.) cites the case of a man who was unable to ejaculate, although the urine flowed freely. After death, a cicatrix was found on the posterior face of the verumontanum, which had changed the course of the ejaculatory ducts, so as to give the seminal fluid a direction different entirely from that of the urethra. This last circumstance may be simply the effect of the obliquity of the verumontanum, near the neck of the bladder, by the effort exercised by the semen on this part, when the urethra experiences any pressure at the moment of emission. I am now attending a gentleman lately married, who, having permitted this practice for many years, has completely lost the power of emission, although he still finds pleasure in sexual intercourse.

It is as difficult to remedy these different causes of sterility, as to demonstrate their existence during life. In cases of engorgement and induration, there is no particular remedy, except those indicated for retention of urine from the same affection. (See the treatises of

Chopart, Desault, Louis, Petit, &c.) When a defect in the emission seems to be caused by a peculiar arrangement of the verumontanum, which has changed the direction of the seminal fluid, we may hope to restore to this latter its natural course, by the use of mechanical means, to overcome its tendency to retrograde. Thus I have employed, and very successfully, a pad, which is attached to that part of the perineum corresponding to the prostatic part of the urethra, and which causes at the moment of coition a compression which prevents the flow of the seminal fluid into the bladder.

3. *Diseases of the Urethra.*—The natural course of the semen may be interrupted by several diseases of the urethra, which either present real obstacles, or which change the direction necessary to fulfil the object of sexual intercourse. When speaking of hypospadias, I have already mentioned strictures of the urethra as causes of these two phenomena, and in order not to return to a subject, the details of which belong to the history of diseases of the urinary passages, I shall simply add some remarks, which seem to be more directly connected with the object of this book.

When the obstacles which have caused the formation of urinary fistulæ have been treated with such success as to establish the continuity of the urethra, the fistulous opening may give a passage to the urinary

and seminal fluids, and thus frustrate the purposes of nature. This occurs principally in those old urinary fistulæ, the parietes of which are covered with an accidental mucous membrane, and especially when the opening has assumed the appearance of a natural orifice with loss of substance in which there is no hope of cure. In the treatise of Chopart on diseases of the urinary passages, and in all the collections of military surgery, we find a great many cases of this character, which can only be treated by such mechanical means as tend to restore the urine and semen to their natural channel. In many cases I have used a layer of gum elastic so thin as not to impede the act of coition, and formed in such a manner as to close all access to the semen through the fistulous opening at the time of the emission. It is but a little while since I had occasion to prove the efficacy of this remedy by the following case.

A colonel of cavalry, D———, had been affected for a long time with a urinary fistula at the base of the penis, the result of several badly treated blenorrhœa: there was no hope of curing the opening which gave passage to the urine and semen. But still he married, and several months afterward came to consult me. After recommending the use of gum elastic sounds, the calibre of which should be gradually increased to favor the enlargement of the urethra, I applied over the fistulous opening a layer of gum elastic, kept in place by two ribands, attached to the gum, and by two

others which passed round the pelvis. This simple contrivance had the desired effect; for nine months afterward his lady was delivered of an infant. I might mention many other cases of this kind seen by M. Esparron, and still more recently by Dr. Nauche.

4. *Diseases of the Muscles which contribute to the Emission of Semen.*—The levatores ani, bulbo cavernosus, and transversus perinei, the convulsive action of which must complete the ejaculation, may lose their motility and become paralyzed by the advance of age, the abuse of venereal pleasures, previous diseases, as apoplexy, hermiplegia, poisoning by carbonic acid gas, &c. We have also known several persons to be impotent from wounds of the perineum, with loss of substance.

It is not equally easy to remedy sterility arising from these different causes. There is less prospect of cure when it comes from age, or from the enervating effects of masturbation, as it is then attended with true anaphrodisia, that is, with a want of sensibility and proper flow of blood to the penis. (See Anaphrodisia, p. 84.) Nevertheless after subjecting the genital organs to a period of rest, and having repaired, by all suitable means, the exhausted strength, we may use frictions of the perineum with spirituous and stimulating liniments, baths, douches of sulphurous and ferruginous mineral waters, and especially the employment of malaxating shampooing which has so powerful an effect in most of these cases, and also on the relaxation or de-

bility of the sphincters. Medication on the occipital protuberances or the nucha will be beneficial in some cases. Baillou recommends old men to indulge in intercourse in the morning, because then the bladder being full, compresses the seminal vesicles, and assists the action of the ejaculatory muscles ; and it is for the same purpose that I have recommended to introduce into the rectum a cylinder or suppository of gum elastic.

An Austrian general of cavalry, who was addicted to all kinds of excesses in his youth, was unable to have an emission at the age of fifty years, although erections took place. Being married at this period, he felt more than ever the necessity of finding aid for his impotence, and came to consult me : the use of the cylinder, added to fulness of the bladder, enabled him to fulfil the act of marriage, and to obtain its most desired fruits.

If muscular debility be the consequence of any cerebral affection, the physician should first attend to this cause, and if he be fortunate enough to treat it successfully, he will also find powerful remedies for the local disease in the use of stimulating liniments, douches, and particularly in the application of moxas and cups to the region of the perineum.

Fissures of the anus, and the spasmodic closing of the sphincters, are diseases which impede or render painful the copulative functions : their treatment consists in a mild, diluent regimen, emollient fomentations,

injections of infusions of seeds of cucumbers, quinces, and melons. Baron Boyer derived great advantage from the following pommade: hog's lard, ℥ix; juice of houseleek, nightshade, and oil of sweet almonds, of each ℥jv. This pommade is melted at a gentle heat, and two or three spoonfuls are injected into the rectum, and this injection is repeated two or three times daily.

The introduction of long and large rolls of lint smeared with a mild, opiated pommade may also be beneficial. These means are almost always insufficient to cure these diseases, and often even to diminish suffering. Experience, however, and the skill of our great modern surgeons, have taught us the curability of this kind of lesions. It consists in one or two deep incisions, which Boyer made with a single cut of the bistoury. He took a bistoury, the very narrow edge of which was straight and rounded at its extremity, and introduced it flat, directing it with the index finger of one hand; he carried it into the rectum, and with one cut divided the intestinal membranes, the sphincters, cellular tissue, and integuments. He thus formed a triangular wound, the apex of which looked to the intestines, and the base to the skin.

By following these indications, we have relieved constrictions of the sphincter with or without fissure, which renders coition impossible by the terrible pains caused by the erections; one only, or a double incision, one on the right, the other on the left, have constantly cured these lesions.

When sterility is produced by a wound, with loss of substance of this part, art can only suggest the mechanical means proposed.

§ IV.—DISEASES OF THE ORGANS OF CONSERVATION.

Diseases of the seminal vesicles still belong almost entirely to pathological anatomy: hence we shall only mention them here to make known the difficulties of their diagnosis and treatment. Morgagni, Le Blegny, Littrè, Lapeyronié, Desault, &c., have cited instances of sterility produced in different alterations of these organs, *inflammation*, *suppuration*, *induration*, and *ossification*. But as they have only been examined after death, we can not lay down any precepts by which they may be detected and treated. A fixed pain in the perineum increased by coition, especially at the moment of emission, dysuria without any other trouble in the urinary apparatus, tenesmus independent of any other morbid phenomena of the large intestine, the diminution or the suspension of the seminal excretion, &c., may, however, give rise to the suspicion of some pathological affection in the vesiculæ seminales, but it is difficult to determine its nature, and to establish other rules of treatment than the use of general means, such as hip-baths, emollient injections, warm drinks, demulcents, &c. In some cases, also, I have used with success setons in the perineum, which I have kept suppurating for several months. Slight moxas have also been beneficial.

ARTICLE II.

Sterility dependant on General Causes Inherent in the Constitution of Man.

Most of the causes of sterility we have hitherto studied, are more or less easily detected, and yield more or less to treatment; but this is not true of those now to be considered. Here, in fact, the etiology of sterility becomes obscure, and sometimes evades our perceptions entirely. Still, to omit nothing on this point which can be learned by science or observation, we refer to two principal divisions all the causes which may give rise to this kind of sterility. Thus we study successively—1, under the title *physiological* dispositions those belonging to the ages, temperaments, idiosyncracies, &c.; and 2, under that of *pathological* dispositions, general diseases, as scorbutic, scrofulous, and venereal cachexies, &c.

§ I.—PHYSIOLOGICAL DISPOSITIONS.

1. *Ages.*—Man is not fit for generation at the moment he reaches puberty. The simple transition from boyhood to youth can not impart this power, as some physicians think. In fact, in order that the secreted semen may be prolific, it must be elaborated by organs which have attained their full development. Now if there be any exaggeration in the opinion of Buffon, who fixes this period at the age of twenty-four years, we think it can not generally occur before the age of twenty years, as Linnæus imagined. In fact, we see

many individuals give proof of fecundity before that time; but the fruits are generally feeble and languishing.

Man preserves his genital powers longer than woman; but it would be wrong to think that he possesses all the conditions relative to generation, because he gives some signs of reproductive life, at an age of decrepitude. Finally, there is no fixed limit for the beginning or end of the genital power in man. It results from a concurrence of circumstances, which impress on him their type of life and sensibility. Thus, in the man whose puberty was precocious, and whose reproductive life was very active, the amatory passion ceases to exist long before him whose marriage has been retarded by education, or by private habits. Hence, we must have regard to the general disposition of the economy, when the genital system is exposed to any excitement. We are not even authorized to use aphrodisiac medicines, unless the impotence occurs in patients who have acquired their entire development, without feeling the necessity for reproduction, or in those whose feelings have been chilled by age, while their constitutions have remained unimpaired.

Those individuals who may be rendered sterile by so many different causes are nevertheless embraced under the same physiological conditions, and should be placed under the influence of the same therapeutic remedies; for if there be need of stimuli to vivify organs so very inert, these stimuli are required to excite a sensibility which is daily extinguished by age.

A Polish nobleman, who had abused venereal pleasures in early life, had entirely lost his virile powers at the age of thirty-five years; he had consulted successively, on this subject, Hufeland, Osiander, Caro, and lastly, the celebrated Tommasini, who directed him to me. The prince was then forty-five years old, and seemed bent under the weight of years. He complained of a severe pain along the spinal marrow, added to extreme difficulty of walking. All the organic functions, and especially the digestive functions, were much changed. Attending at first to the state of exhaustion, which was evidently the primary cause of impotence, I advised the patient to absent himself entirely from society, to prepare for an anti-anaphrodisiac treatment. He lived with some friends for several months, in a small country house, where his time was divided between hunting, fishing, and gardening; adding to the influence of these remedies, a regimen essentially analeptic, and which was continued for about six months. I then advised for him the following syrup, which I added to a weak tisan of chicory, in doses of four or five spoonfuls, daily :—

Nut of the Cacao Theobroma,	℥ iv,
Husk of Vanilla,	℥ ji,
Ginseng root,	ʒ v,
Root of Jean Lopez,	ʒ iij,
Gentian root,	℥ is,
White Sugar,	℔ iv,
Water,	q. s.,
Tincture of Saffron,	ʒ ij,

All of which were mixed. Each day I directed him to rub the spinal column, the inner part of the thighs, scrotum, &c., with the usual anti-anaphrodisiac liniment. (See the Pharmacologia.) The prince wore, night and day, an asterasic girdle, which contained the tincture of ambergris, and the essential oil of roses. The patient began to experience the good effects of this treatment, when he was obliged to suspend it on account of the coldness of the weather. I advised him to spend part of the winter at Nice, where he resumed his treatment, which was attended with the desired result. The prince has since married, and has now three children.

2. *Temperaments.*—The temperaments, particularly, exercise a very manifest influence on the degree of energy of the genital powers. We know that amorousness is usually attended with the bilious and nervous temperaments, while highly lymphatic constitutions are often accompanied with a kind of frigidity which renders them sterile. The same remark has also been made in regard to individuals who are extremely fat. It seems that under these circumstances, all the vital forces have left the genital organs, to concentrate their influence on some particular system, which they develop in excess. Those prolific flowers which become sterile because their stamina are changed into petals by an excess of nourishment, present us with the picture of this kind of sterility in man. So too there are athletic constitutions, which are attended

with a kind of apathy of the sexual organs, as if the whole vital power was then consecrated to the development of the muscular system.

In accordance with the same laws, the genital apparatus may itself become a centre of vitality more or less active at the expense of the rest of the organization. This superabundance of life in the sexual organs, which the learned Halle terms the *genital temperament*, because it characterizes a greater aptitude to generation, is often hereditary, or the fruits of a premature education, bad habits, &c.

In considering the temperaments under this last point of view, we observe also that some individuals are sterile from a want of the genital temperament, as there are individuals in whom the sexual organs are struck with a kind of original inertia, generally characterized by a slight degree of development in the penis, its almost constant flaccidity, the laxity of the scrotum, incontinence of urine, sour smell of the perspiration, fine tone of voice, &c.

The sterility dependant on a general disposition of the temperament is undoubtedly one of the most difficult to treat. The ancients recommended to combine one of these temperaments with one of another kind, so as to render marriage fecund. Thus it has been recommended that thin men should marry with fat women, and light men with dark women, and *vice versa*. This opinion which has served for a basis for the author of the *Studies of Nature* to establish his

system of contrasts in love, became, in fact, entitled to some degree of probability from the numerous facts he has collected. In cases of constitutional sterility, art may also have recourse to the different means for exercising the different organic systems, and particularly the genital system. Thus exercise in the country and in a season when the passions show themselves with the most energy, the employment of aromatic vegetables, spirituous liquors taken with reserve, aphrodisiac remedies administered with judgment, liniments of hartshorn and cantharides, the use of electricity, &c., may be particularly valuable in the treatment of this kind of sterility. But it would be more plausible to count on the success of these remedies in cases of local impotence, or those resulting from a defect of genital temperament. (See Local Anaphrodisia.)

3. *Idiosyncrasies.*—To make known the influence which different individual idiosyncrasies may have on the genital powers, we must dwell for an instant on the sense which must be attached to this word considered under the head of sterility. Every individual has a a mode of sensation, of living, and of suffering; and this disposition which is inherited, or which is acquired by the different hygienic circumstances, may impress on the sensibility of the genital organs, a fashion and degree of affectibility which it is sometimes difficult to refer to its true source. I know of no case which will show better the influence of these causes on the genital powers of man than the following fact.

M———, a peer of France, had been obliged to leave France, when twenty years old, to avoid the dangers of the revolution. He went to New Orleans, where he lived for nearly fifteen years, and adopted the manners of the country. In 1814, he returned to France, and wished to change his course of life, eating indiscriminately of all kinds of meat at table; but he soon perceived that his genital powers were failing. Being consulted under these circumstances, I prescribed an anti-anaphrodisiac treatment which was unsuccessful. Mr. M. having desired to renew his old regimen, I advised him to use savory, asparagus, herb bennett, and especially ginseng and truffles; and recommended the loins and genital parts to be rubbed with a liniment of ambergris. He took in the morning a bowl of warm milk and seven or eight spoonfuls of mush; at noon, a salad with meat; in the evening, several dishes of vegetables with game. Mr. M. continued the same course for several years, and had the full possession of his virile powers: but it is remarkable that he lost them when he suspended the use of this diet for several days.

In many cases sterility is connected with a kind of apathy of the sensitive, with an inertia of the genital powers, as we shall see in the following cases.

M. G., of Lyons, merchant, well formed, married at the age of twenty years a young lady to whom he had been very fondly attached from his youth. After two years of happy union he had the misfortune to lose his

wife in difficult labor, and the grief for this loss caused him to absent himself from society for several years. When thirty-eight years old, his parents wished him to marry again. He then perceived that his genital organs were inert. For this he consulted Dr. Montain, of Lyons, who recommended travelling and thermal baths, which were followed for several months without success. He was recommended to me by the president of Chenevas.

M. G. was then forty-one years old, enjoying good health, and was even fleshy: all his functions were performed regularly, but the sexual parts were constantly flaccid. The patient was put on the use of some warm baths, a diuretic tisan; I then recommended the congester, the application of which was very painful. For about a month the blood penetrated with difficulty into the corpus cavernosum. Oily frictions of the penis, emollient cataplasms, and the use of the congester two or three times daily, gradually produced feeble erections. After the employment of this instrument, abundant pollutions supervened during sleep. Emollient fomentations and hip-baths removed this factitious irritation of the tissue of the ejaculatory vessels. M. G. recovered in a little time the exercise of his genital powers, and is now the father of two children.

Case 2.—A young man from Brussels, twenty-four years old, well made, tall in stature, and having the genital organs largely developed, had committed so

many excesses in his youth, that when twenty-two years old, he lost his virile powers. He sued in marriage for the hand of a young lady to whom he was much attached, and his mind was constantly directed to her charms. From some symptoms of insanity, he was placed in the asylum of Esquirol, and there the treatment subdued, to a great degree, the violence of his passion. After being under the charge of Esquirol for one year, he left the maison de santè, and went to Paris with a friend. Occupation and employment soon caused him to forget this young lady. His sexual desires, however, returned, but he was much surprised at finding that his virile powers were lost. To regain them he tried several remedies, but ineffectually. Finally he was referred to me by Dr. Barbier, of Brussels.

Treatment.—Asterasic frictions to the lower extremities; baths, shampooing, the use of anti-anaphrodisiac substances; then horse exercise, &c. After a month and a half of treatment, the application of the congester, which was at first very painful. Much time and perseverance were required before this instrument could be used with comfort. I, however, brought blood into all parts of the cavernous tissue. After fifteen months of varied treatment, order and harmony were restored to all the functions.

Dr. Mortcourier recommended to me two young men, whose genital functions were paralyzed. One was twenty-seven years old, and was extremely timid

at the thought of sexual intercourse, although on the eve of marriage. His genital organs were small, and the prepuce presented a phymosis, for which I operated. The action of the congester increased the length of the penis about one fourth. The erections became full, and his marriage was followed by a family.

The other was about twenty years old, small in stature, but strong; the genital organs being largely developed. He had abused his genital organs a good deal, and suddenly they lost their power. I used ablutions of cold water, with the tincture of benzoin; frictions to the kidneys; asterasic baths, and finally, the application of the congester. In some months, this young man nearly recovered his virile powers. He went into the country, where he again lost the use of his organs from excess. On his return to Paris, we resumed his treatment, and his genital powers returned. The application of the congester caused powerful erections, and has constantly remedied this impotence.

In 1826, B. T., a young man twenty-eight years old, well brought up by a bishop, who had always led a virtuous life, married a young lady to whom he was fondly attached, and was surprised to find his virile powers were lost. For ten days, he made all possible efforts to attain his purpose; erections sometimes came on at night, but as soon as he attempted to approach his wife, they subsided. The testes were small, round, tender to the touch; the cord was painful, granular, thin; there was paraphymosis, arising

from a very short frenum; after the operation, full erections were caused by asterasic ablutions, and the application of the congester. After fifteen days, he was able to perform his marriage duties.

I have attended many others for the same cause. M. M. was married when young, but was impotent. Although his mind was filled with voluptuous images, the erections subsided as soon as he attempted intercourse. Asterasic frictions to the kidneys, baths, ablutions, sinapised pediluvia, and the application of the congester brought on erectility of the penis. When the erection was slight, some spoonfuls of anti-anaphrodisiac syrup rendered it complete.

The same treatment has constantly succeeded in similar cases.

§ II.—PATHOLOGICAL ALTERATIONS.

Every morbid state may compromise, more or less, the phenomena or product of generation, either by causing real impotence, or by exercising some influence on the secretion of the semen.

None of the general diseases or diatheses, considered by some authors as a cause of sterility, seem to have a sedative action on the sensibility of the genitals. The genital organs are only affected with inertia, when they share the debility of the other living systems. So that impotence from these causes is seldom seen, except when the muscular strength is evidently enfeebled. It is thus that scurvy, having con-

tinued for some time, often renders the persons affected with it, impotent. The venereal, scrofulous, cancerous diatheses, &c., may also in some cases extend their debilitating effects to the reproductive apparatus, although the fecundity of those affected with them, is attested by too many instances. Most chronic diseases produce in the long run the same effect. None of them, however, seem to be attended with increased energy of the genital system. We know, for instance, that amorousness is seen commonly in those affected with phthisis, as if the centre of heat, which consumes the principal organs of individual life, extended all its activity to the reproductive system.

So, too, we see after acute diseases convalescents are extremely amorous, which cases, however, must not be confounded with the preceding. Here, in part, nature is simply occupied with the preservation of the individual, and seems to have forgotten during the course of the disease all functions relating to the life of the species, and it is not generally till the moment of convalescence and of return to health, that the virile powers resume their activity : *sani hominis est appetere et ad eam valere et sobolem procreare.* We are ignorant how far the different diatheses or general diseases may render copulation unproductive by altering the secretion of the semen. We only know that this fluid is sometimes changed in its color, although we are ignorant to which of the fluids composing this secretion, to attribute the change. We believe it has

been remarked to have a red or blackish color in hypocondriases, and a fetid odor in those subject to epilepsy.* Aristotle had noticed that the semen loses its prolific power with its consistence, where he says: "If the male semen floats on water, it is unproductive, while if it sinks, it possesses its procreative power."† In fact, observation proves that those individuals in whom the semen has become fluid and transparent by excessive losses, are generally sterile.

If we could remedy sterility arising from some of the diatheses, it would be done by directing all our remedies to the nature of the affection. There, in fact, the physician must terminate his efforts, and in cases of incurability, say with Jeremiah, addressing the people of Israel: "Rejoice, thou barren, that bearest not!"

* Ephem. Nat. Curios., dec. 1, Ann. 1, Obs. 63.

† De Generat. Anim., lib. iv.

SECTION II.

STERILITY IN THE FEMALE.

Physiological Remarks.

Woman is the second part of the social tie which she forms simultaneously with man, to produce a complex whole. The pivot of all human felicity, she becomes the centre of the family; the emblem of man, by her conjugal necessities, and the intimate relations she contracts with him, nature has provided her abundantly with all the qualities indispensable for the wants of life, and for social happiness.

It does not enter into our plan to state the immense advantages which the female brings into the conjugal union; many illustrious writers have treated of this subject in eloquent treatises; and Roussell, Legouvé, Virey, and many others no less enlightened, have stated the characters, physical beauties, and moral qualities of females. We are to consider her here only in respect to the causes or impediments which obstruct fecundation.

The female child grows up with the male child, and the distinctions of sex are not regarded. When arrived at the age of puberty, nature makes in her great physical changes. She is moved, instinctively, by sentiments of shame, modesty, and timidity, of which she has hitherto been ignorant. She is more timid in

her thoughts and actions ; she seeks solitude, and prefers quiet to the noisy plays of childhood. It seems that nature directs her, in all these phenomena, to learn the important part which she is to fulfil afterward. She soon perceives the remarkable difference which exists in the two sexes—it is the commencement of a beautiful organization—it is the female, who now assumes her legitimate attributes. Hitherto, the young girl has worn her clothing loosely, without fatigue, and has moved about freely ; her organs and limbs are developed vigorously, and without constraint, without effort. In the new existence which all these changes bring, the clothing of infancy is removed, and she is obliged to wear corsets, under the pretext of acquiring a shape, in which, generally, but little discernment is shown ; and the poor child being thus imprisoned, as it were, suffers. If there be slight deviations in some parts of the thorax or dorsal spine, stronger whalebone, plates of iron, and steel, and leather, are used, and she is subjected to still greater annoyances. The respiration is difficult, the circulation compressed, her motions are constrained, and many symptoms appear, such as loss of appetite, disturbed and interrupted sleep, and palpitations of the heart, which is sometimes hypertrophied. The organs are displaced, especially the uterus, which is pushed into the cavity of the pelvis. How many instances could be cited, where these cruel and pernicious manœuvres have excited sterility in females. How many times, too,

have they caused organic changes, which have been attended with fatal consequences? We insist that it is absolutely necessary to bring up the young female under such physiological conditions as will not interfere with the functions which nature has devolved upon her, and especially those of reproduction. I am aware that the defects of our social organization oblige us to modify the normal rules or precepts of education, either physical or intellectual. But since the poor female is condemned to submit to these irregularities, we must at least make them as light as possible.

What a remarkable difference between the country female, who is robust and strong, and in perfect health, and who combines all the elements for rearing a numerous family, whom she nurses and brings up with vigilance and care (and seldom do we find a sterile woman in this class), while the city female is often deprived of the pleasures of maternity, by most of the causes we have mentioned. Finally, since the females of our cities are obliged to submit to the requisitions of the world, they are forced to fulfil a great many duties. They are obliged to be amiable, kind, and gracious, and possess all the treasures of a good wife, to captivate and please. A sweet voice, the tones of the piano, the vibrating cords of the harp, and even those of a sweet guitar, have produced their effect on more than one husband. It is by the happy feelings of the heart that the chords of love in the suiter are

touched; the organs yield to the sweet attractions of nature, and thus its work is accomplished.

The causes of sterility in the female are much more numerous than those belonging to the other sex—which has led an author to remark, that we find thirty sterile females for one man who is impotent: *Oritur sterilitas plerumque fœminarum vitio; triginta enim mulieres steriles in singulos viros impotentes si divisio fieret inveniri possunt.** We shall here refer likewise to two principal heads: that is, to diseases of the genital system, and to the physiological and pathological genital arrangements, all the circumstances which may oppose copulation and fecundation.

ARTICLE I.

Diseases of the Genital System considered in the Female in respect to Sterility.

§ I.—DISEASES OF THE ORGANS OF UNION, OR DEVIATIONS OF FORMATION COMMON TO ALL PARTS OF THE VULVA AND VAGINA.

The deformities in the vulvo-vaginal canal are numerous; it may also be affected with various pathological lesions. Both may injure or impede the work of reproduction. The examination which we are about to make, will show under what circumstances art is necessary, and even indispensable, to aid the

* Manninghan, in *Artis Obstetr. Comp.*; Sect. *de Conceptione.*

necessities of nature, in fulfilling the functions of generation.

1. *Excessive Length of the Clitoris.*—Some authors have classed the unnatural development of the clitoris among the causes of sterility: in fact, if we consider that those females who possess this abnormal organization which, in its length and size, equals and even exceeds the dimensions of the male genital organ, are more disposed and addicted to the pleasures of love, they experience an inevitable necessity of producing an action in this part where all the voluptuous sensations are situated; they, however, are not disposed to sexual congress, but to solitary indulgences. When duty obliges them to yield to conjugal necessities, we find an abnormal perturbation, either from an organic arrangement which is developed by this depraved taste, or by the impediment and even suffering during the lawful functions of love: we can then imagine that the proper genital organs being deprived of the super-excitement caused by the act of coition, the prolific matter can not be absorbed by the uterus.

The only remedy for this monstrosity consists in amputating the clitoris. This amputation is performed with strong scissors curved on their edge, or rather with a long and short bistoury: the arteries should be tied up, and a proper dressing applied. Strangulation has been abandoned in consequence of the extreme pain it causes, and the slowness of its operation.

We have all read the history of that Roman lady

who was surprised by her husband while engaged in illicit pleasures. Enraged, he cut off the clitoris with his sword, and thus rendered her fruitful after eight years of a sterile marriage. I shall relate, on this occasion, the two following cases.

Case 1.—In 1814, there was brought to my maison de santè, in Bologne, a young girl, twenty years old, who had been married for several years without having any family. She indulged in the fatal habit of clitorism, which she contracted in early life, and practised it to such a degree that she was brought to the last stage of marasmus. Pelletan and Dubois were consulted several times on this subject, and finally decided that the removal of the clitoris was the only mode of arresting this practice. The operation was performed with one cut of the bistoury: she regained her health, and even after became a mother.

Case 2.—Last year, while at Frankfort on the Maine, M. S., who had been married for five and a half years, requested me to examine his wife, aged about twenty-five years, whose clitoris measured four inches and some lines; its turgescence in the genital act was a great impediment. M. S. caressed his wife with great repugnance, while she felt extreme disgust for her husband whose embraces were very painful. The desire of having a family induced both of them to consent to the amputation of the clitoris, which was performed easily and without any bad symptom. Twenty-five days afterward, Mad. S. was much sur-

prised at unknown feelings caused by sexual congress; in two months the menses stopped, and she became pregnant.

Abnormal formations in some cases have caused inflammation of the clitoris. I have seen those which were very large: they are to be cured by antiphlogistic remedies.

The clitoris may likewise be affected with carcinoma, which will interfere with the generative process. This disease usually commences at the end of the glans. As soon as its character is well ascertained, the organ should be removed in the same way as the penis, is. Hemorrhage may be arrested by the cautery, or by a ligature. If the disease extend further, the base of the clitoris might be detached from the pubic arch, as was done successfully by Dupuytren in a a case where he removed all the external genital organs, which were carcinomatous.

The fourchette, or the perineum, may be lacerated by accidents or by a difficult labor. The lesion of the fourchette is by no means serious, and rest and cleanliness will effect a cure; but that of the perineum is not only disagreeable, but is injurious to the functions of reproduction: hence every mode should be adopted to keep the divided parts together.

2. *Deviations in the Formation of the Nymphæ.*— The nymphæ, or internal labia, are sometimes very large, becoming several inches in extent. This formation is very inconvenient to the female, and seriously

impedes and afterward prevents reproduction. It is rarely seen in Europe; for during the twenty years I have attended to the subject of sterility, I have known but three cases. A lady from Rio Janeiro, who had been married for some years without bearing children, had two very large nymphæ which projected between the thighs. She was extremity repugnant to sexual intercourse which caused intense pains and chills. The desire of becoming a mother caused her to submit to an operation, which I performed with a bistoury, cutting down the nymphæ as much as possible; the hemorrhage was arrested by compression, and no bad symptom followed. The next year this lady was confined with a daughter.

At the close of 1833, a girl, twenty-two years old, was presented to me, whose parents were anxious should marry; one of the nymphæ was very long, and she wished to have this removed before taking a husband. I performed the operation, and removed a labium, the greatest diameter of which was more than seven inches. Last October I performed the same operation on a female twenty-two years old.

When the nymphæ have congenital or accidental adhesions, coition can not occur. They should be divided with a bistoury, and a proper dressing applied.

As the diseases or lesions affecting the vulvo-vaginal canal are described in special treatises, it is useless to mention them here.

3. *Absence of the Vagina.*—Instances of this mal-

formation are found in many authors, among others in Haller and Vicq d'Azyr. Richerand, too, in his Physiology (vol. ii., p. 347), has given the history of a female in whom this organ was deficient. This deformity does not of itself form a case of incurable sterility except by the absence of the uterus with which it is generally attended.

4. *Narrowness of the Vagina.*—Natural narrowness of the vagina is a circumstance which may render the consummation of marriage more or less difficult, but which can not be considered as a cause of impotence. In fact, it is extremely rare, that coition alone does not cause in time the dimensions requisite for the reproductive act. This is not true of accidental contractions resulting from a cicatrix after a wound with loss of substance, or an inflammation which causes induration and thickening in the region of the parietes of the vagina so as to render coition impossible. This accident also may be the effect of a kind of hardening, arising from the use of astringents which some females abuse. M. Murat, in the *Dict. des Sciences Medicales*, vol. i., vi., p. 479, has mentioned the history related by Chambon, of a female, twenty-six years old, in whom, from using astringent injections, the vagina had become callous to such an extent as to prevent the introduction of the penis. The vagina also may be contracted in a part of its extent, or in the whole of its length by osseous tumors near it, or by syphilitic, schirrous, carcinomatous excrescences, &c.,

developed in the texture of the vagina. Heisser and Morgagni have known the vagina to be contracted by natural and accidental transverse bands which presented a kind of fleshy or membranous bands to the introduction of the penis. It is also known that the membrane of the hymen may become so dense as to oppose invincible resistance to the efforts of the husband.

When the specific causes which have given rise to contractions of the vagina have been treated by general and local remedies, we may use tents of prepared sponge, oily injections, and emollient hip-baths, &c.; but it is very difficult to cure those arising from bony tumors developed in some part of the pelvis. Although it has been asserted that the female may conceive notwithstanding the obstacle of the hymen to the introduction of the penis, it seems to us, however, always necessary to divide the part when the vagina can not be dilated sufficiently in the natural way.

5. *Obliteration of the Vagina.*—The external orifice of the vagina may be closed naturally by an imperforate hymen, or by the presence of a second membrane which arrests the menstrual discharge, and renders the act of coition impracticable. Ruysch,* Baudelocque,† Pelletan,‡ and Chaussier,‖ &c., have related instances of this malformation which is remedied by making a crucial incision in the membrane causing the obstacle, and by introducing a tent of lint spread

* Thesaurus, vi No. 86.
† Traitè des Accouchemens.
‡ Clinique Chirurg., vol. ii., p. 204.
‖ Bulletin de la Facultè, No. III.

with cerate, so as to prevent the union of the flaps formed by this operation. In some cases, also, we have found the base of the vagina naturally obliterated by a more or less dense membrane, which presented the same obstacles to the flow of the menses and to coition. This circumstance can not be detected so easily as the preceding, and the operation is more doubtful and difficult, especially if the obliteration occupies a certain extent in the vagina. Morgagni,* when consulted in regard to a case of this character, did not dare to advise the operation lest the bladder and rectum might be wounded. Nevertheless Prof. Flamant and Dubois recommended to prolong the opening by following the natural direction of the passage; but this operation, which may be attended with the most serious inconveniences, requires the application of the precept of Gardien† to ascertain in advance if the uterus exist, and to wait until the female experiences symptoms of retention of the menses; and finally to be careful that the vagina does not open into the bladder or rectum as may be the case.

If the parietes of the vagina adhere completely, art should respect this aberration of nature, rather than imitate the course of the surgeon mentioned by Dehaen, who penetrated into the bladder without finding the vagina.

6. *Deviations in the direction of the Vagina.*—The

* Epist. Anat. Med. 46. † Traitè des Accouchemens.

opening of the vagina into the rectum has been but seldom noticed. It may occur congenitally or accidentally. The most remarkable case is that related by Louis, in a thesis. I have had occasion to present an observation on this subject to the society of practical medicine at Paris: that of a female, thirty years old, in whom the vagina opened into the rectum above the sphincter. The menstrual discharge occurred regularly, and sometimes the blood collected, and did not resume its course till the female went to stool, or took an enema. This female was married, and three years had elapsed without sexual congress. I examined her with great care, and in penetrating into the rectum, it was easy to find an oval fissure behind the prominence formed by the sphincter, and from two to three inches in extent. I introduced the index finger there, and in advancing, I detected the os tincœ very plainly, and hence concluded that the female could be impregnated. Some time after this, the husband acting in accordance with my instruction, the female became pregnant. Before her confinement, I employed means for dilating the parts, such as fatty bodies, emollient fomentations, prepared sponges, and lastly, gum elastic cylinders; and by moderate efforts, I obtained great dilatation of the anus and vagina; and the latter had become large enough to allow the child to pass. At parturition, the child presented in the first position of the head; the rectum and vagina were freely lubricated with oil, and I made all the dilatation possible, both of the vagina

and anus. The child passed with difficulty through the lower strait of the pelvis. On coming to the opening of the vagina, it remained there for some time; but with the aid of a blade of the forceps, I disengaged the head without apparent injury to the rectum. All the efforts of the poor mother, with my aid, could not overcome the resistance of the fibres of the sphincter, the opening of which, with all our assistance, could not attain the diameter necessary for the passage of the child. After waiting the time necessary for the use of emollient hip baths, it was decided, in consultation, and by the consent of her parents, to divide the sphincter. I then made a deep incision near the perinœal region, and the delivery terminated happily. The head of the child was large, and the infant was strong, and well-made. The edges of the wound were brought together with sticking plaster, and kept in place by an appropriate bandage. The succeeding dressings were made with the most minute precautions; the parts suppurated; the cicatrix was closed imperfectly; nevertheless, one point of the suture contributed to its approximation or agglutination, and at the end of five months, this female could retain her feces. She has refused, however, since this time, to indulge in intercourse, as she dreads the result of a second labor.

Spasm of the Vagina.—Sometimes the vagina is so irritable, that it contracts on the slightest contact, and does not admit the introduction of the penis, or ren-

ders its introduction difficult and painful to the male and female. If an examination of this passage be made with the finger, this examination is difficult and painful, and the mucous membrane is dry, arid, and not lubricated with mucus. This state of spasm and dryness is frequently a symptom of chronic affection of the uterus ; but sometimes it exists independent of any other complaint. In this latter case it is remedied by emollient and mucilaginous lotions and injections, and by introducing large tents smeared with a fatty body, and a pommade of simple cerate and extract of belladonna.

Polypi.—The presence of polypi within the vagina may become a cause of sterility, by the difficulties thereby opposed to the exercise of coition, and by changing the direction of the penis and neck of the uterus. We shall see, when speaking of uterine polypi, the treatment then to be adopted for this symptom.

Vaginal Fistulæ.—The natural communications of the vagina with the rectum and bladder, some instances of which are known—those more frequent which result from a laceration, or a gangrenous inflammation, after difficult labor, or any operation in which the instrument might injure the vagina—constitute so many causes of sterility. Beside the disgust inspired by such an infirmity, it necessarily renders the coition unproductive, by changing the natural direction of the seminal fluid. In many cases of this kind, I have

profited by the idea concurred in by Desault and Baudelocque, when treating of natural and accidental communications of the vagina with the rectum and bladder. I have had instruments made of gum elastic, modified in the speculum of Recamier, so as to be adapted to the state of parts. Among the examples of success obtained in this way, I will here mention three cases.

Case 1.—The wife of a watchmaker in the province, experienced, in a difficult labor, which had required embryotomy, a laceration of the recto-vaginal septum, which occupied a great part of the vagina. This accident was followed with sarcomatous vegetations so large as to establish a kind of channel for the penis, and thus gave a mal-direction to the emission of the seminal fluid. To obviate this, I applied a semi-speculum of silver, which I constructed as the state of the parts required; the end of which was designed to fix anteriorly the os tincœ, which had inclined backward, to compress the tumor, which opposed the introduction of the penis, and to destroy the relation of the vagina with the rectum. By the aid of this instrument, kept in place by several strips which were attached to a circle placed around the pelvis, this lady gave new proofs of fecundity.

Case 2.—The wife of a restaurateur, at Paris, requested my advice on account of a natural communication between the bladder and vagina. The opening was such that in coition, the penis entered the bladder.

After examining the parts, I thought proper to use the instrument mentioned in the preceding case, modifying it, however, so that it could be adapted to the pubic face of the vagina, where the point of communication existed. The apparatus was applied as in the preceding case, and with the same success. In a few days after the cessation of the menses, madame became pregnant, and was happily delivered. Only I was obliged with one blade of the forceps, to depress the head, which at each contraction of the uterus tended to penetrate into the opening of the bladder. I ought here to remark, also, that this lady, refusing to submit to the introduction of this instrument again, had no more children.

Case 3.—The subject of this case is the wife of Col. S., who, in a first labor, had the recto-vaginal septum completely torn. This accident, which seemed to arise from a very marked depression of the arch of the pubis, and which Dubois and Richerand had considered incurable, rendered all conjugal approaches ineffectual, as the semen was discharged into the rectum, or out of the body. Being sent for by Madame S., who was anxious to have other children, I saw no mode of remedying the defect, but by using a speculum, the uterine extremity of which should depress the base of the vagina. This was followed by the desired success.

§ II.—DISEASES OF THE ORGANS OF SECRETION.

1. *Absence of the Ovaries.*—Although the existence of the ovaries is one of the conditions most necessary to generation, one of the two may be deficient, or its functions may be entirely lost, and this circumstance may not produce sterility. We find in William Hunter, a fact, which justifies this assertion completely. The natural or accidental absence of the two ovaries, necessarily produces sterility.

2. *Absence of the Spermatic Arteries.*—Poupart has stated, in the Memoirs of the Academy of Sciences (1701, ob. 1, p. 35), the history of a young girl in whom the spermatic arteries and veins were deficient. We can conceive that this circumstance (but few cases of which are known), must, like the preceding, give rise to incurable sterility.

3. *Inflammation of the Ovaries.*—Without mentioning here, as a cause of sterility, the acute inflammations of the ovaries, which attend those of the uterus and peritoneum, and which necessarily indispose the patient for sexual functions, there are different other degrees of phlegmonous irritation, the progress of which is more slow and obscure, and which may, however, produce sterility, without manifesting its existence, except by general phenomena. Thus chronic inflammations of the ovaries, whether concomitant with, or consecutive to, those of the uterus, have appeared in many cases to oppose fecundation, either simply by the derangement of the functions of the ova-

ries, or by the narrowness or obliteration of the tubes which attend it.

There is still one kind of temporary inflammation of the ovaries, to which few authors have paid attention, because it is indicated generally only by nervous phenomena, but which seems to us to be the proximate cause of sterility in most females, endowed with the *uterine temperament*. We find in Bonnet,* Blegny,† Lieutaud,‡ and Blancard,‖ different instances of swellings of the ovaries observed only after death, in females affected with hysteria and nymphomania.

The treatment of sterility arising from any inflammation of the ovaries, is naturally deduced from the theory of the disease. Thus, leeches to the two iliac regions, hip baths, emollient cataplasms, and enemata, combat with the same success, both the accidents of hysteria, and the sterility resulting from it. I might cite several cases of females who were sterile, or affected with nymphomania, who have regained their fecundity under this treatment. Sometimes, in these cases, after employing the remedies mentioned, I have made two issues, and kept up the suppuration for several months.

Induration and Schirrous of the Ovaries.—Although these accidents most generally occur in females who

* *Sepulchr. Anat.*, sect. 8.

† Journal de Med., vol. xxi.

‡ Hyrt. *Anat. Med.*, part 1, obs. 1494.

‖ Prax. Med., p. 175.

have passed the critical age, it is not unfrequent to find them in women possessing all the attributes of their sex, and especially, in those who have had several difficult labors. The schirrous state of the ovaries does not prevent fecundation, unless both these organs are affected at the same time, since it is almost proved that conception usually takes place only on one side. Instances have been cited, too, where females have become pregnant, although they have had tumors of different sizes in the region of the ovaries, a circumstance which it is difficult to explain, except by the integrity of the vesicles coinciding with alteration of the envelopes of the ovaries.

We regard sterility from such a cause as absolutely incurable. It is certain, in fact, that if the employment of means for treating phlegmonous irritation, which precedes it, has been unsuccessful, we can not hope to obtain complete resolution until the induration has arrived to a certain extent. The treatment in this case belongs to general pathology, and it would be useless for us to detail it here.

5. *Osseous and Calcareous change of the Ovaries.*—These two modes of organic alteration, several instances of which we know, and are observed even in young females, would necessarily imply sterility, if the two ovaries were simultaneously affected, of which Chopart states a remarkable instance. Although it is difficult to detect the existence of such causes during life, it is still less permitted to expect their cure.

6. *Dropsy of the Ovaries.*—Dropsy and hydatids of the ovaries being most generally only a complication of the schirrous degenescence of these organs, constitute causes of sterility, which commonly resist all treatment. (See Schirrous of the Ovaries.)

7. *Absence or Alteration of the Corpuscles of the Ovaries.*—Malpighi thinks that the absence of the ova or corpuscles of the ovaries may be a cause of sterility. We know, also, that the ovaries may present a healthy appearance, although their internal organization may be affected with serious lesions. Morgagni, and Vallisnieri, have admitted, as a cause of sterility, different alterations in the corpuscles of the ovaries, which they have observed after death in persons who have been sterile. But we must admit that the internal structure, and the functions of the ovaries, are still too little known, to give any opinion on this point.

8. *Hernias of the Ovaries.*—The displacement of the ovaries, of which we find many instances in surgical works, have been thought by many authors, to produce sterility. But as they frequently attend hernias of the uterus, perhaps the sterility of females who present this structure, should be referred to the last cause. Pott (on Hernia) cites a case where the two ovaries were contained in the same sac, without giving rise to sterility. Portal, also, relates the case of a female who died in labor, and in whom the right ovary was found to have passed from the abdomen

through the ischiatic notch. It may be that at the moment of the formation of the hernia, the ovaries inflame, and contract adhesions with the part, through which they pass, and thus lose their functions.

The therapeutic indication of hernias of the ovaries is founded solely on the mode and kind of displacement of these organs. It is important, however, to ascertain that this displacement does not occur at the same time as that of the uterus, so that the means of reduction may be applied directly to this organ. (*See Deviations of the Uterus.*)

§ III.—DISEASES OF THE ORGANS OF CONSERVATION.

1.—*Absence of the Uterus.*—Many authors, among others Columbus (*De re Anatom.*, lib. 15), Baudelocque (*Art des Accouchemens*, vol. 1, p. 195), and Chaussier (*Bull. de la Fac. de Med.*), have mentioned instances of the absence of the uterus. This deviation of formation may exist alone, but is generally attended with absence of the vagina, and causes, in either case, positive sterility. It would not be the same were the uterus replaced by a simple membranous pouch, capable of supplying its functions to the end of labor.

A young girl of Vienna, in Austria, aged twenty-four years, of common height and constitution, passed from the anus, every twenty or twenty-five days, a large quantity of blood, but presented no other phenomena of menstruation. She enjoyed perfect health,

and performed the duties of nurse at the Lying-in Hospital at Vienna, for about six weeks, when she was attacked with pains in the groins and kidneys, which compelled her to keep her bed. Having examined her by touching, I found neither neck nor orifice of the uterus. On raising the tumor, which projected a little into the cavity of the pelvis, I felt, at several different times, very distinct motions, which led me to suspect pregnancy. From this time to the end gestation, the patient was obliged to keep her bed. Repeated bleedings, hip-baths, and emollient enemata, produced but slight improvement. The nearer she approached the end of pregnancy, the more she suffered. About the ninth month, we detected in every direction in the cavity of the pelvis, the child's head, through an extremely thin membrane of a dense texture; on the right, and a little backward, was found a round opening, about two lines in diameter. Seeing that the strength of this unfortunate female was daily declining, and that she was in the last stage of marasmus, I determined to bring on labor. In this, I was assisted by Drs. Prussielgue, Richard, Meunier, and Schult, who were all of my opinion. With this view, having placed the female in a proper position, we made at the lowest part of the organ, an incision large enough to permit the extraction of the child; the amniotic fluid was discharged, the head presented in the second position, and the labor was readily terminated by the forceps. The child, a male, was feeble,

although apparently full grown, and it lived for several hours. The umbilical cord was very thin, about seven and a half inches long, and without a placenta; it was attached on the right side of the vertebral column, nearly at the base of the kidney. All my efforts to detach it were useless, and it suppurated off on the fifth day. The female died from inflammation, which could not be arrested. On opening the cadaver, we found in the place of the uterus, a very compact membranous pouch, which adhered intimately to the lower part of the vertebral column, and with some portions of the mesentery, epiploon, and even the ascending colon. This membrane received two principal arteries, the size of a pigeon quill—the right arose from the renal, the left from the hypogastric of the same side. It was supplied with very many nervous filaments, coming from the great sympathetic nerve. There was but one ovary and tube, which were changed by inflammation. The other parts of the abdomen presented nothing remarkable.

2. *Closing of the Neck, Body, and Orifice of the Uterus.*—The neck of the uterus may be closed naturally by a membrane, or be obliterated by inflammation or schirrous tumors developed in that part. This closing may be perfect or imperfect: in the former case, conception is impossible; in the second case, when the menstrual discharge is seen, fecundity may occur in some cases, but is not always possible. We know that at the moment the seminal fluid is projected upon

the orifice of the neck of the uterus, this neck performs a movement of suction which is peculiar to it, and seizes the semen: it may escape when this action is imperfect.

Although it is not always easy to detect the different kinds of alteration and to proceed to their cure, yet if touching reveals a foreign body in the orifice of the uterus its removal should be attempted. A simple membrane will be readily divided by a common trocar, a straight bistoury, and perhaps still better, by a trocar and canula. I prefer the latter, the course of which is more certain. Chaussier has known this closing several times to be the effect of a membranous concretion of a coagulable character. Boyer, in his treatise on surgical diseases, relates several cases of this, among others, two of Littré and Benevoli are very curious.

Uterine polypi are not rare, and are easily detected, especially those which arise from the neck. They are at first very small, and imperceptibly acquire greater development. Unhappily, most females who are affected with these excrescences, are informed of them only by the severe pains they feel in the kidneys, groins, and thighs, or by the irregularity of the menses; and beside, from feelings of modesty, they are unwilling to be examined till the last moment. The removal of the polypus is the only mode of cure. The practitioner will select the mode of operation, having prepared for it by proper treatment. On this point I shall relate two cases.

Mad. L. married a second time, about two years since; being still young, and generally in good health, she was very anxious to have a family, having had no children by her previous husband, when she began to feel symptoms which indicated the commencement of pregnancy. The physician at Orleans, who was consulted, took the same view of the case, but the deep-seated pains in the lumbar region soon gave rise to the suspicion of some unknown complaint; I was sent for, and soon found a polypus in the neck of the uterus projecting into the vagina. After proper treatment I applied a ligature to this polypus but not without some difficulty. On the fifth day I divided the peduncle with the bistoury, and took away a pear-shaped livid polypus weighing six ounces. This lady soon recovered. Three months afterward she had symptoms of conception, which she regarded as a new polypus, and it was not till the fifth month of pregnancy, that she was undeceived by feeling very distinctly the motions of the fetus.

The second case is that of a female who had borne several children, and when thirty-seven years old was affected with symptoms which she regarded as a new pregnancy: her sufferings increased daily. There was a consultation held of three physicians, I being one, to ascertain and examine the disease of this lady. On examination per vaginam, I detected a polypus in the neck of the uterus, and this was verified by the speculum. One month afterward, this time being re-

quisite to prepare for the operation, I removed the tumor by the same process and in the same manner as in the preceding case. Pregnancy occurred eight months after the operation. The same means are used for the removal of polypi from the body of the uterus.

3. *Circa-Uterine Membrane.*—Having attended, for a long time, specially to the study of the causes of sterility, and the means of treating it, I have found this membrane in two cases of females who died sterile, and had never menstruated. This membrane was united with the tissue of the uterine mucous membrane near the base of the neck of the uterus, and it was impossible to divide them. But it was easy, with a scalpel, to remove it from the whole surface, except where prolongations went from it into the tubes. This membrane had the form of a bursa ; its mucous tissue was slightly dense and compact, and resisted the cutting instrument. Its color was of a grayish white, its thickness was about a line : it adhered in both cases to the Fallopian tubes, which were closed hermetically.

I have had occasion to see fragments of the same membrane obliterating the passage, in the amphitheatre of Dr. Laurens, at Paris, a gentleman distinguished for his erudition in anatomy and physiology. Some English practitioners have also observed the same membrane, and it has been noticed by Dr. Clemens, of Frankfort on the Maine, in the uterus of a sterile female. Professor Norfini, of Florence, has shown

me this membrane, preserved as a wet preparation, in the cabinet of the Faculty of Medicine, of that city, a cabinet which possesses a very curious collection of pathological specimens. It will be seen that, in these cases, art fails.

Many authors have recommended hysterotomy in cases where the uterus is completely obliterated, which induced me to open the neck of the uterus, in two females where the neck was long, and then, while the body was very small; and these two cases are recorded in the succeeding article—*Atrophy of the Uterus.* This operation is demanded by the pathological or abnormal adhesions, and, also, the schirrous induration, which obliterate the neck of the uterus, in females enjoying, in other respects, the attributes of their sex. And this is done, not only to re-establish the relations between the vagina and the uterus, but also to arrest the progress of organic changes, which might endanger their existence. With this view, Dupuytren has performed this operation several times, on subjects affected with these diseases.

4. *Want of a Cavity and Atrophy of the Uterus.*—The uterus may exist without any uterine cavity, or be wasted so much as to nullify its functions. Levret and Smellie have cited several instances of this. Haller (*Disputat. Anatom.*), Baudelocque, Flamand, and Desormeaux, have opened females in whom the uterus was excessively small; though this does not prevent intercourse, there is always sterility. I stated the fol-

lowing cases, in 1834, to the Society of Practical Medicine, at Paris.

Madame V., an English lady, twenty-three years old, of lymphatic constitution, and moderate in flesh, had enjoyed perfect health until nearly sixteen years old, when the marks of puberty began to appear; but there was no menstrual secretion. She was very much affected by this, and the physiological phenomena were obstructed. A violent peritonitis soon followed, for which she took mercury in large doses, while her abdomen was rubbed freely with mercurial ointment, once or twice, daily. This heroic treatment aggravated the disease; but, by the use of antiphlogistics, she was cured. The physical form of this lady became more developed, until the age of twenty, without any appearance of menstrual discharge. At this time, she married a vigorous young man; and, by sexual congress, the genital system was rendered very active, so that about every six weeks, this female perceived, for forty or fifty hours, a weight about the uterus, with heat, as at the appearance of the menses, and, after sexual congress, there was great irritation in the vulvo-vaginal canal. The sexual relations were suspended, baths, hip-baths, injections, and lotions of emollient substances, quieted all these symptoms, which reappeared for several times, but which were finally removed. The desire of a family induced them to seek professional advice. They applied to Sir Astley Cooper, who recommended the opening of the neck

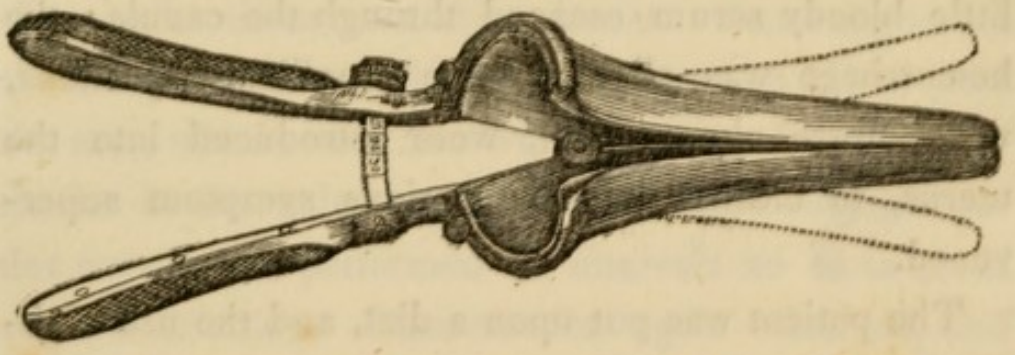
of the uterus as the only mode of giving issue to the menses, and the faculty of conceiving. This proposition was rejected. In 1835, N. brought his wife to see me, and, by touching and the speculum, I detected a uterus, which was very small; it was a little longer than natural, and was soft, and thrown backward, probably by the penis in the act of coition. It had no opening, and seemed to form a compact whole. My views, as to the plan of treatment, coincided with those of Sir Astley. Prof. Dubois also agreed in this opinion, while Baron Boyer rejected it as dangerous and rash. Finally, the desire of having a family conquered her repugnance, and this lady determined to follow my counsels. A course of hygienic treatment was adopted, and I then proceeded in the following manner: all the dorsal, lumbar, and iliac surfaces, as also the inner parts of the lower limbs, were rubbed with special embrocations, and warm baths, hip-baths, and thermal douches, were also employed, as well as malaxating, shampooing, while, with a congester, I kept up a constant action on the uterus. I gradually succeeded in rendering this organ hypertrophied, so as to make it very perceptible to the sight and touch. All the tissues which seemed inanimate before this medication, soon assumed a vigorous aspect. I was obliged, not only to permit this interesting patient to rest, but, also, to have recourse to antiphlogistics; and to the repeated application of leeches to the upper part of the thighs, the vulva, uterus, and to a slight

revulsive bleeding from the arm, in order to diminish the sanguineous congestion of the genital organs.

Finally, it was decided that the uterus was favorably disposed for opening its neck. A day and hour were therefore appointed, and in the presence of our preceptor, the venerable Dubois, and other assistants, I operated (July 5, 1833) in the following mode: The patient was placed in the usual manner—laid horizontally on a kitchen table, covered with a mattress, the head a little elevated, the pelvis fixed so that the ischiatic tuberosities were on a level with the edge of the bed. The legs and thighs were flexed, and separated. A broad band was passed around the loins, provided with a large pad, by which an assistant pressed the abdomen so as to push down the uterus.

A bivalve speculum, as seen in the cut, lightly

[Fig. 24.]



smeared with lard, was introduced into the vagina. This form of speculum has the advantage of embracing the base of the neck, and of removing the folds which may form around the neck of the uterus. The lower two-thirds of the neck of the uterus was then grasped by the congester, so as to bring it as near as

possible to the vulva. This done, a thick riband, several lines broad, was placed at the base of the neck, at that part which was left free. The congester was withdrawn, and I then introduced a semi-metrastere on the lower face of the speculum, to keep the neck and the portenœud firm and quiet, the whole being held by an assistant. I divided the summit of the neck with an abscess lancet, and then introduced a uretrotome, armed with a very sharp blade, between the edges of the incision, pushing the instrument as gently and carefully as possible, to make a straight passage, and directed it with two fingers of the left hand, keeping the neck on the metrastere ; after some resistance, I passed through the neck and penetrated into the cavity of the uterus, without wounding it. The portenœud and the riband were removed, and when the blade of the uretrotome was withdrawn, a little bloody serum escaped through the canula : the hemorrhage was slight; some emollient injections, which were almost cold, were introduced into the uterus, to cleanse it. No serious symptom supervened.

The patient was put upon a diet, and the use of diluent drinks ; injections of mild substances were made several times daily into the vagina as well as into the cavity of the uterus. The next day, the pulse being quicker, a revulsive bleeding was made from the arm, and the symptoms subsided. The pains, which in their period of increase radiated from the centre of

the uterus to the internal parts of the genital apparatus, to the kidneys and stomach, from which mucous and bilious matters were vomited several times, gradually subsided. Suppuration supervened in the neck without any peculiar phenomena, and was favored by as much attention to cleanliness as possible. On the seventeenth day, I withdrew the canula which was replaced by a hollow sound of larger calibre, and every day I introduced into the uterus mild injections, as infusions of lettuce, &c. The sound was changed several times, every time a larger one being inserted, and was finally withdrawn when the patient, in the opinion of Dubois, was perfectly cured.

About a month after the recovery of this lady she indulged in coition, which soon caused a new determination to the uterus, new pains, and a discharge of blood followed for the first time: this slight menstruation continued only for thirty hours. Some days after the discharge, I was obliged to take some blood from the arm, which, with two warm baths, relieved the irritation in the vulvo-vaginal canal. The conjugal duties were again performed at intervals so as to avoid vaginal irritation. Menstruation again occurred, and more freely than the first; and after this symptoms of pregnancy soon appeared, and in due time the lady was delivered of a daughter.

Another remarkable practical fact of the same character presented itself at the beginning of the next year. A provincial lady, of a good constitution and

lofty stature, had nevertheless reached the age of twenty-two years without having menstruated: for more than four years she experienced at each return of the menstrual period a feeling of weight and burning towards the iliac region and deep parts of the genital apparatus, always without any appearance of the menstrual discharge, then giddiness and suffocation supervened, which obliged her to lose some blood.

This lady being married, the copulative functions soon caused determination of blood to the genital system: about the menstrual period she felt severe pains in the pelvis, and a good deal of tenesmus; and it seemed to her as if she wanted to pass something from the vagina. This state continued, but as she lived in the country she was tardy in applying for medical attendance, and a physician did not see her till she became affected with metroperitonitis, which was happily treated by antiphlogistics. Six weeks afterward, when she imagined herself slightly recovered, she felt a painful spot below the two false ribs on the left side, which became very intense; a tumor soon appeared in this spot, gradually enlarged, and fluctuation was detected. In this state the female came to Paris, to consult Prof. Roux. He opened the tumor, which discharged a large quantity of pus of a nauseous odor. The tumor did not disappear till after suppuration had continued for two months and a half. This female returned home: sexual relations and another menstrual period brought on the symptoms already mentioned,

and revulsive bleedings, diluent drinks, hip-baths, and clysters were used. In a journey I made to Orleans to see a lady affected with a polypus in the uterus, this lady told me the preceding facts, which were confirmed by her physician, and I ascertained by touching, and by investigations through the vagina and rectum, and by the uterine speculum, that although the neck of the womb was in the normal state, it had no opening. The uterus was very much developed: I indicated immediately the sole treatment to pursue, which was rejected with disgust. Eight or ten months afterward, annoyed at the trouble attending each menstrual period, this lady came to find me, to submit to the operation I proposed, which was performed in the same manner, and with the same success as in the preceding case. Severe regimen was followed for three months, after which the menses appeared, and there was no return of the trouble. Her health now improved, and in a short time she mentioned to me that she was pregnant.

5. *Leucorrhœa.*—Hippocrates (*De aere, aquis, et locis,*) thought that leucorrhœa would oppose fecundation. If this opinion, which has been adopted by many authors, presents numerous exceptions, we can not deny that sterility is frequently seen in persons affected with leucorrhœal discharge; and I could cite several cases of females who have not become pregnant till after the cessation of this discharge. Chronic leucorrhœas seem particularly to give rise to sterility, possibly by

the obliteration of the tubes which sometimes causes it.

While leucorrhœa may of itself become a cause of sterility, it deranges the health of the individual more or less, and therefore deserves in this double respect all the attention of the physician.

It does not fall within our province to mention here all the remedies which have hitherto been proposed for this kind of affection, but we will state that the remedies from which we have obtained most success in these chronic discharges are the employment of cutaneous revulsives, such as the use of the baths and douches of Bareges, dry frictions over the whole body, added to the use of woollen or flannel shirts. In cases where the disease is obstinate, we have used flying blisters and even issues about the lumbar region when the disease is obstinate.

There are also cases where tonic and ferruginous preparations may be of some use as Haller observes, but they must be administered with care.

6. *Amenorrhœa.*—As impregnation requires the physiological integrity of the organs of generation, amenorrhœa will be found one of its principal obstacles. The derangement of the vital properties of the uterus, which necessarily attends suppression of the menses, most generally renders this organ incapable of being impregnated. But perhaps we must distinguish the fact of the suppression from the physiological modifications produced in the uterine system, inasmuch as

this latter circumstance alone seems to us to constitute the cause of sterility. In fact, females conceive who do not menstruate, which has led some authors to say, and with reason, that menstruation is not indispensable to conception. I know a lady who is the mother of three children, and who has never menstruated. In the course of the year she never loses more than an ounce or two of blood, at two or three different periods: her health is good, but we can see it would not be so if the defect or irregularity in the menstruation were attended with habitual trouble in the vital properties of the uterus, and in the health of the individual. It is in this latter case, that amenorrhœa usually brings on sterility, which proves also, that menstruation is rather the effect than the cause of puberty, and that the female is not sterile because she is not regular, but because the uterus does not possess the degree of action necessary to fecundation.

It is difficult to establish general rules of treatment for a disease which demands as many remedies as there are causes of it: the remedies also will vary according as the suppression is sudden or slow, according to the constitution of the individual, and the occasional causes of the disease. We must consequently depend but little on the action of the remedies called emmenagogues, at least, unless special indications exist which is very rarely the case, and even in this instance it is perhaps more prudent to have recourse to slightly stimulant anti-spasmodics, such as distilled aro-

matic waters, added to ether, acetate of ammonia, &c. Royer Collard also has mentioned electricity as a powerful emmenagogue; but this remedy must be used with prudence, if the uterus be the seat of a sanguineous congestion or nervous irritation which must first be relieved.

7. *Menorrhagia.*—This disease, like the preceding, may impede impregnation, as it modifies, analogously, the uterine system, although it presents very opposite characters. In fact, in the first case, menstruation ceases, because the uterus has not the degree of sensibility necessary to call to itself the materials of this function, or, because it becomes accidentally a focus of irritation and congestion, which suspends its secretory action. In menorrhagia, this organ, which is inert, or endowed with a kind of vital exaltation, which is followed by a more or less free sanguineous exhalation, seems to be placed under the same physiological conditions.

Need I say, that the treatment of menorrhagia, like that of the preceding disease, must be varied according to the numerous causes which produce it, and that here, as in all rational therapeutics, we must try to bring the diseased organ under the influence of remedies capable of imparting to it the type of sensibility, necessary to the exercise of its functions. It is to the rules of hygiene that the physician will resort for the surest modes of regulating menstruation. The horizontal posture, rest of body and mind, food not

very substantial, slightly acid, and easily digestible; in the periods between the menstrual discharge, moderate exercise in the country, agreeable amusements, hip-baths, enemeta, and injections of cold water, &c., —these are the most powerful means of moderating a too abundant periodical discharge.

8. *Hysteria, Nymphomania, Erotomania*, &c.—The exaltation of the vital properties of the uterine system, which has received as many names as it assumes forms, seems to us to embrace here the different affections designated by authors under the terms hysteria, nymphomania, &c. In fact, whether we consider these different anomalies as causes or effects of the venereal excitement which constantly attends them, we must admit that their general or local phenomena arise from the same source—that is, from some lesion of the genital system; and that to this latter circumstance, must be attributed the sterility with which many hysterical or nymphomaniac people are affected. This truth finds irresistible witnesses in the observation of the anatomico-pathological facts which attend, in most cases, the commencement of the disorder. Thus Diemerbrock and Morgagni have found some alterations in the genital organs, on examining the bodies of hysterical females. It is sufficient, also, to admit the constant state of spasm of the uterus, in females affected with this disease, to account for the perversion of the genital functions. These different circumstances, however, rarely oppose fecundation, inasmuch as

they generally occur in those persons who live in a state of celibacy, or widowhood. Sometimes, however, they are seen in married females, in consequence of the frequent repetition of the sexual act, *ex frequente coitu*. In some cases, also, they occur under the influence of clitorism, of which we have already mentioned remarkable cases.

Our opinion as to the theory of neuroses or general anomalies, which do not differ here except in their general phenomena, and in the moral circumstances which attend them, necessarily dictates, in regard to each of them, the same mode of treatment, modified, however, by the nature of the symptoms. General or local bleeding, baths at a low temperature, dashes of cold water on the kidneys, exercise, travelling, &c.; and all the remedies capable of distracting the mind, have often favored the impregnation of people affected with this kind of symptoms, by subduing passions too ardent, or too much excited by abusive enjoyments.

9. *Anaphrodisia.*—Pleasure, says Magendie, enters as an element into the act by which the human species is perpetuated; and although females have been impregnated, when indifference or hatred were prominent in unions disavowed by the heart, it is certain that pleasurable delight is the circumstance most favorable to conception. Many females are sterile, only because they co-operate coldly and passively in their conjugal duties; while the female who tastes the sweet delights

of pleasure has already a presentiment that she will be a mother. The reason that prostitutes conceive so rarely, is because their genital organs pass from a state of venereal excitement to true anaphrodisia. The uterus, constantly stimulated by new acts, as Astruc remarks, soon loses its sensibility, and is then incapable of being impregnated.

As there are seasons which dispose to love, so, too, certain climates exercise a very marked influence on fecundity. Sterile females, inhabiting a cold or temperate climate, have become productive, when dwelling under a meridional sun, and *vice versa*. It has also been remarked that phlegmatic and very fat females conceive more easily in summer and in spring; while those who are ardent, or of a nervous temperament, require, as it were, to be tempered by winter, or a cold climate (Stein's *De Causis Sterilitatis*, p. 58). Other hygienic circumstances may also have a sedative influence on the genital system.

Although abstinence can not be considered a direct cause of sterility, it may, moreover, throw all the organic systems into a kind of inertia, and justify the adage—*Sine Cerere et Baccho friget Venus*. Hippocrates, also, thought that hard and cold water rendered many females sterile, but this opinion is not confirmed in our day. This is not true of alcoholic liquors, the abuse of which seems to be more or less contrary to the reproductive process. Alberti has proved this in a thesis, entitled *De Ebrietate Feminarum*

—that there are more females than males sterile from the effect of spirituous liquors.

Anaphrodisia may also be the result of a defect in the relation and equilibrium between the physical and moral constitution, for although the female may be more independent of moral causes than the male, yet we may remark that most of those addicted to the study of sciences are sterile. In speaking of anaphrodisia in man, we have already mentioned the physiological reason of such an influence, in consequence of the unequal division of the vital powers, which are then devoted to mental processes—which led Roussel to remark that a female, deeply occupied in mental pursuits, existed only so far as the head was concerned.

The female, also, is more free than the male from the moral causes which quiet the genital power. Nevertheless, the two following instances will prove that sterility may occur under the influence of this cause alone. A lady, who had an inclination for another person, previous to her marriage, suffered the approaches of her husband simply through a feeling of duty, and without any sensation of pleasure. After being married for several years, and without issue, she met at a ball, and in the dance, her former lover, who, she thought, had forgotten her; but she experienced, on seeing him, such a lively emotion, that she was forced to leave the ball-room. The same trouble continued all night; and, for the first time, she experienced delight from the caresses of her husband.

The female who is the subject of the last case, enjoyed, at Paris, all the pleasures which an ample fortune could afford, but she became wearied of them; and remembered that she had been married nearly seven years without thinking of maternal happiness. By my advice, she abandoned the giddy whirl of the world, and the gay pursuits of fashion, and retired to the country, where she was placed upon a course of treatment and regimen. After remaining there several months, one beautiful summer's eve, this lady was sitting near her husband, in one of those enchanting spots which are seen only in nature; a river flowed with a gentle murmur at their feet; the tufted trees extended their shadows even on the surface of the water; the sun was almost set; and the stillness of evening was disturbed only by the fluttering and the song of birds. The softness of the air, the charm of the place, caused a gentle agitation in the mind of this lady, and at that moment, she felt a desire for her husband that she had never known before. She now soon became a mother.

Other physical and moral causes which we have mentioned at length and more in detail, when speaking of anaphrodisia in the male, may also enfeeble, or even extinguish in the female, the reproductive power; but we must admit that such effects are observed less frequently in one sex, which, to crown the work of generation, needs only to yield to the other sex.

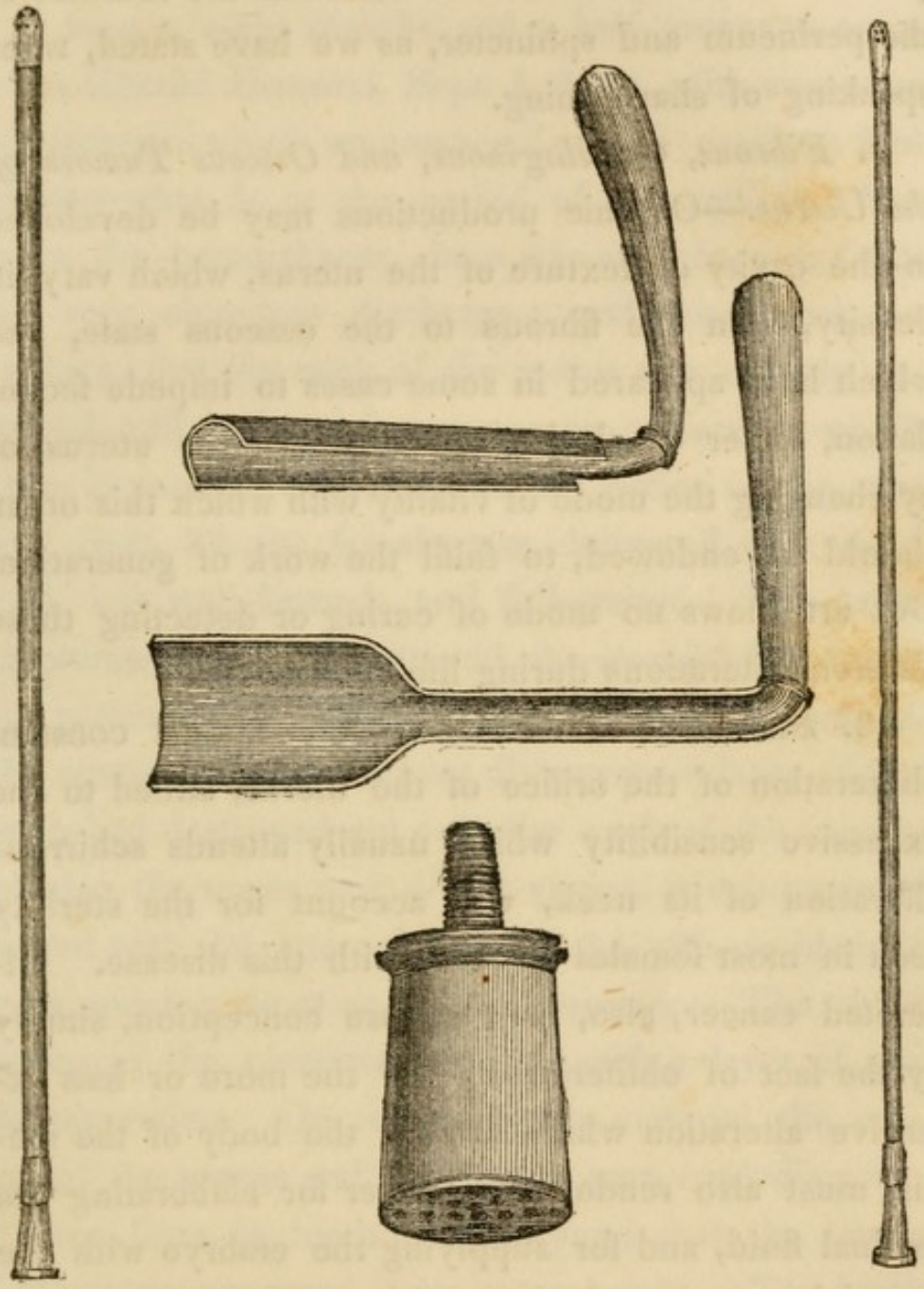
We must, however, remark, that if, under certain circumstances, the female is entirely destitute of voluptuous sensations, yielding only through condescension to conjugal duties, this cause also may prevent fecundation, although it is not absolute. Many cases of this kind of anaphrodisia have been seen in my practice. It was so marked, that the ladies affected with it felt no change, and no sensibility, in the act of coition.

I have known three ladies destitute entirely of a clitoris, who informed me they never felt any of the sensations they ought to experience, in coition.

Be this as it may, we must direct our remedies to the genital system, and use the same therapeutic means as those we have stated for anaphrodisia, in the male. The treatment, however, will be modified according to the causes of anaphrodisia. We must keep up a more or less intense action on the external, or deep-seated genital organs, and must employ, in turn, the rubefacients, shampooing, and the congester. As shampooing can only be performed imperfectly with the fingers, we should, for the deep-seated parts, use forceps, made for this purpose. The congester will solicit a direct action on the uterus, especially on its neck.

We must then use injections introduced through uterine sounds, as seen in the cut, and composed of thin flaxseed tea, oil of poppies, or of almonds, at a moderate temperature. The liquids must grad-

[Fig. 25.]



ually and successively be rendered more active, according to the sensibility of the patient; and sometimes it will be necessary to produce sensations so violent that the patient swoons. We must not neglect stimulating frictions, shampooing, douches on the

surfaces of the occipital, dorsal, lumbar, and glutœal prominences; and must also stimulate the muscles of the perineum and sphincter, as we have stated, when speaking of shampooing.

9. *Fibrous, Cartilaginous, and Osseous Tumors of the Uterus.*—Organic productions may be developed in the cavity or texture of the uterus, which vary in density, from the fibrous to the osseous state, and which have appeared in some cases to impede fecundation, either by closing the orifice of the uterus, or by changing the mode of vitality with which this organ should be endowed, to fulfil the work of generation. But art knows no mode of curing or detecting these different alterations during life.

10. *Schirrous and Cancer.*—The almost constant obliteration of the orifice of the uterus, added to the excessive sensibility which usually attends schirrous alteration of its neck, will account for the sterility seen in most females affected with this disease. Ulcerated cancer, also, may oppose conception, simply by the fact of obliteration; but the more or less extensive alteration which attacks the body of the uterus, must also render it improper for elaborating the seminal fluid, and for supplying the embryo with the materials necessary for its nutrition. Some facts, however, seem to prove that a female may conceive, and carry a child the full term, notwithstanding the cancerous alteration of schirrous of the uterus. This, at least, was the opinion of Levret, and also of M. Bayle,

and Cayol. These latter, to justify their assertion, state the following case :—

A female, eight months and a half pregnant, came to La Charité Hospital, Sept. 1, 1811, with excessive hemorrhage, which commenced on the previous December—that is, at the period of conception. Between the hemorrhages, there was an ichorous, fetid, and very abundant discharge ; and we found, on touching, that the neck of the uterus was entirely destroyed, and replaced by an uneven surface, in which it was impossible to distinguish the orifice of the uterus. Sept. 22, the female was delivered of a dead child, but well-formed, and full-grown. The same symptoms, however, continued, the strength failed, and the patient died on the twenty-fifth of February. The opening of the cadaver discovered a large ulcer, which had destroyed not only the neck of the uterus, but also the upper part of the vagina, which communicated with the internal part of the urinary bladder by an opening about an inch in diameter. The whole surface of the ulcer was covered with a layer of putrid ulceration. On removing this material, the erosion of the uterus and vagina was seen extending two or three lines in depth ; but, beyond that, the tissue of the uterus appeared in its natural state. The body of the uterus had only its natural size, and all the other viscera were in a healthy state.

Without denying the possibility of fecundation in females affected with schirrous, or cancer of the neck

of the uterus, we can not conclude, with the observers of this fact, that a female may also conceive and carry a child the full term, notwithstanding the deep erosion of the neck of the uterus by a cancerous ulcer; for here, no symptoms of disease had preceded the moment of conception. All the symptoms dated from this latter period, and seemed to arise, or, at least, to become more intense, as pregnancy advanced. Be this as it may, if the cancer does not prevent aptitude for pregnancy, it endangers the existence of the female and that of its fruit. Art, then, must attack it at the outset; and, especially, before it has reached the body of the uterus, because it is then incurable.

11. *Hysterotomy, or Extirpation of the Neck of the Uterus.*—Hysterotomy, or extirpation of the neck of the uterus, seems to us to be the only mode of arresting the progress of the disease mentioned, and of giving some hope for a family. Osiander of Goettingen, Dupuytren, and Lisfranc, have performed this operation many times, by different processes, and with unexpected results, which have been followed by great success. Dupuytren used a speculum uteri with two or three blades, the forceps of Museux, with which he seized and brought down the neck of the uterus, and then with a catlin, or long and strong scissors, with flat curved blades removed the neck. Lisfranc preferred two probe-pointed bistouries, one straight, and one with a curved blade. The forceps of Museux which he uses are longer and stronger, and the hooks

are less curved than those generally employed. A bivalve speculum, bistouries of different sizes, and strong-curved scissors, complete the principal parts of the apparatus.

The skilful physician of La Pitié read a memoir on the amputation of the neck of the uterus to the Academy of Sciences, June 2, 1814, in which he made the following remarks :—

"The following is a physiological fact of the highest importance: the amputation of the neck of the uterus has proved that this part of the organ is not necessary to pregnancy, and even when the neck of the uterus has been removed, gestation sometimes proceeds favorably to its full term. Labor then generally terminates very easily. Of ten of those operated on by me, only one miscarried, at four months: she had committed imprudencies, which, under any other circumstances, would have caused abortion. I would add that Mad. Carpentier, who has allowed me to use her name, has borne two children at the full time, born in good health. Drs. Avenel and Bouclu attended her. I must not conclude this paper," says Lisfranc, "without stating to the Academy, that of the ninety-eight females operated on by me, eighty-four were cured, and fifteen died. Among the latter were several cases of relapses. We should remark, too, that our reverses have only affected those in whom the disease had advanced very far: we hope then that as our new views on diseases of the uterus are more

advanced, the chances of failure will be less as the operation will be performed sooner."

Many cases mentioned in the Bulletin of the Faculty of Medicine in Paris, favor this operation, which has restored to life and health many females attacked with engorgements of bad character, and cancers of the neck of the womb. The following case proves also that the same operation may remove sterility produced by another affection which would have required this remedy. Mad. N. had enjoyed perfect health until the age of fifteen years, when menstruation first appeared. Violent pains in the pelvic region, added to more or less intense nervous phenomena, and repeated at each return of the menses, often required the employment of bleedings, baths, and other soothing remedies. When twenty years old, Mad. N. married; but this only rendered these accidents more intense. Mad. N. experienced severe pain in sexual congress; many physicians were consulted, and different remedies were prescribed, but unsuccessfully. Dupuytren, having been advised with in this case, examined carefully the state of the parts, and detected a malformation of the end of the neck of the uterus, which had the form of a hook. The whole circumference was painful, glistening and ulcerated in several points. This skilful surgeon could suggest no mode of cure but incision, which was performed several days after with perfect success: the menstrual discharge reappeared at the usual period, and four months afterward, Mad. N.,

who had hitherto given no mark of fecundity, became pregnant.

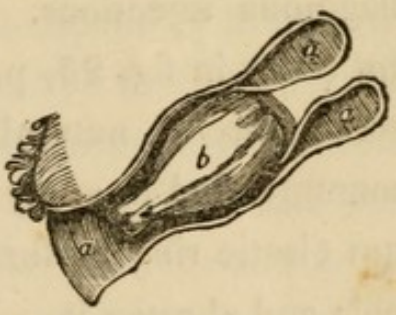
12. *Deviations in the Position of the Uterus.*—Sterility often depends on certain displacements of the uterus, among which may be noticed its descent, its reversion, its anteversion, its retroversion, its hernia.

1. *Descent.*—Before coming from the sexual parts, the uterus may undergo several degrees of displacement which have been termed collectively incomplete prolapsus. This circumstance has seemed in many cases to oppose fecundation, either by changing the natural relations of the sexual parts during conjugal intercourse, or by rendering this more or less painful by a kind of collision which the penis then exercises on the neck of the uterus.

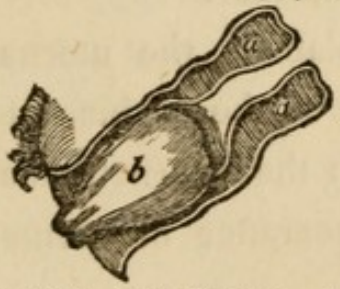
These different degrees of prolapsus are seen in the annexed figures, the first one showing the natural position of the uterus.

[Fig. 26.]

a. The vagina.
b. The uterus.



Partial descent of the uterus.
a, *a*, *a*. Vagina. *b*. Uterus.



17 Prolapsus uteri. *a*, *a*. Vagina. *b*. Uterus.

In treating of defects in the dimensions of the penis, I have had occasion to speak of the mechanical means proper to render coition less painful to the female, and I shall confine myself to relate an observation which seems to me to confirm this. Mad. de St. ———, aged twenty-four years, had been married seven years, and had no family: the husband and wife apparently enjoyed all the attributes of their sex, and also desired children, when Mad. S. came to my maison de santé for a disease of the skin with which she had been affected for several months. Having informed me of her sufferings during sexual congress, I examined the neck of the uterus, which I found lower than usual, directed to the left and backward, and slightly curved on itself. I learned from the husband that he was excessively strong, and this rendered coition painful. To remedy this double inconvenience, I prescribed for Mad. S. the use of hip-baths and mucilaginous injections. I then applied a semi-speculum (seen in fig. 25, p. 187), to bring the neck of the uterus into its natural position, and at the same time recommended to apply to the vulva, during coition, a gum elastic ring perforated in the centre to receive the penis and shorten it. By pursuing this course, Mad. S. soon became a mother.

In complete prolapsus, the uterus gradually passes through the whole of the vagina, and is more or less perceptible between the external labia, so as sometimes to present the appearance of hermaphrodism. This

accident would necessarily imply impotence, and, consequently, sterility, if art did not return the uterus and keep it fixed by a pessary: but not unfrequently in this latter case, the female conceives and goes her full time. I have even known a lady who became pregnant after the reduction of a complete prolapsus of the uterus, and who, after her confinement, had but a slight displacement of the neck of the uterus which now scarcely descends to the inferior strait.

2. *Inversion of the Uterus.*—Although the inversion of the uterus is most generally the immediate result of parturition, there are cases where it is caused solely by debility, or by causes which tend to distend the uterus, as dropsies, uterine hemorrhages, &c. Whatever may be the degree of prominence of the tumor, sterility always attends it.

It is not difficult to reduce the uterus which has suffered this kind of displacement, but it is sometimes troublesome to prevent relapses, especially if the affection be of long standing. When the first intention has been fulfilled according to the different rules indicated for the taxis, a pessary should be applied, and absolute rest should be prescribed, and the horizontal posture should long be maintained; injections and douches of sulphurous or ferruginous mineral waters should be used. Many females have been known to conceive after the reduction of more or less complete inversions of the uterus, but it is especially important to

avoid the consequences of a new inversion after parturition.

3. *Anteversion, Retroversion, and Obliquity of the Uterus.*—The deviations of the neck of the uterus, which arise from some displacement of the body of this organ, are rarely causes of sterility, as they are most generally the product of gestation. If it should happen that any degree of inclination occurs in the neck of the uterus, and this circumstance seems to impede fecundation, it would be extremely necessary to employ the speculum, the efficacy of which has been confirmed by several cases already mentioned, and particularly by the following :—

Mad. ———, aged thirty-nine years, had remained barren for nearly twenty years, in a union contracted against her taste, and the wishes of her parents. In 1809, Prince Kourakin, with whom she was *intimately* connected, and who honored me for a long time with his particular esteem, wished me to treat her for an ascites which disappeared in a little while. Mad. ——— manifested on this occasion the most lively interest to have a family : she had already consulted for this Prof. Hallé and Dubois, who had advised her to take mineral waters, but without success. On returning she consulted me again, and submitted to an examination. In this exploration I had much difficulty in finding the neck of the uterus, the extremity of which was situated behind the pubis. This last circumstance, which seemed to me to be the cause of the sterility of mad-

ame, was attended with a kind of genital coldness, which I treated by proper remedies, and especially by the anti-anaphrodisiac syrup : to ascertain the efficacy of such remedies, I placed two setons in the loins which caused an erysipelatous eruption, extending to the whole of this region. After waiting for some time for the effect of these different remedies, I introduced a demi-speculum, to keep the uterus in its natral position. It was by the aid of this apparatus that fecudation occurred, and the desires of Mad. ——— were gratified.

Madame R., of Creole origin, and of a very delicate temperament, married, at the age of eighteen years, a French officer, whom she loved passionately. For about fifteen years, they lived together, at Martinique—their union was sterile. Despairing at not having children, they came to Paris at the beginning of 1820, to try the effect of the climate of France ; and, at the same time, to employ professional advice. On their arrival at Paris, they consulted Prof. Dubois, who found the neck of the uterus situated anteriorly, projecting unusually far into the vagina. Prof. Dubois attended to the general health of Madame R., and prescribed for her a tonic treatment, which was followed by good effects. Not being able to attend the patient carefully, I took charge of her. After continuing the same remedies for some time, I prescribed the use of the anti-anaphrodisiac syrup, and that of frictions, with the asterasic pommade, which

caused an unusual degree of excitement in the genital organs. To correct the malposition of the neck of the uterus, I applied the metrastere immediately after the menstrual discharge, and repeated its application three times, very soon after this period. After some time, Madame R. became pregnant, and was happily delivered of a healthy child. We have known three other cases, of ladies who have been sterile from bad positions of the uterus, and who have become mothers, from the same process.*

Diseases of the Fallopian Tubes.

The diseases of the tubes are quite as difficult to detect as those of the ovaries, which they almost inseparably attend. Their inflammation, which is necessarily the result of that of the uterus and ovaries, may cause contraction, or even the complete obliteration of their passage, and thus become an incurable cause of sterility. This closing exists much more frequently at the peritonœal than at the uterine extremity of the tube. There is one pathological fact which is almost constant—that the free faces of the mucous membranes unite with great difficulty, while the serous

* To use the metrastere, the vagina should first be dilated by oily injections, and emollient hip-baths, and the female should be placed on the edge of the bed, with the knees raised and separated; one end of the instrument is then introduced into the vagina with one hand, and the other end grasps the neck of the uterus, and directs it into a part of the passage to receive and fix it. It is then kept in place by bands fixed around the pelvis, or the female keeps it in place by holding it with the hands.

membranes contract and form lesions with the greatest facility. It is about the sloping orifice of the uterine tubes, that the continuation takes place between the mucous membrane of the sexual organs of the female, and the serous membrane which lines the abdomen. We shall readily understand that, as the mucous membrane changes, in a measure, into a serous membrane, it acquires the properties of the latter; and as after a metroperitonitis, or a peritonitis, the fimbriated ends of the tubes adhere together, and partially or entirely obliterate the canal of the tube.

The Medical Gazette, of Paris, for September, 1838, says, and with reason, that every cause of peritonitis might become a cause of sterility, especially if it begins in the pelvic organs; and as it is exactly in these organs that the peritonitis of females commences, we have already one reason for the frequent obliteration of the peritoneal extremity of the tubes, coinciding with the adhesions between the internal genital organs and the surrounding parts.

It follows that the numerous instances of sterility I have seen, have supervened after pathological lesions of the pelvic viscera; whether these females have had one or more children, or have borne none. Let us examine this practical fact, when a more or less acute, a more or less vivid inflammation commences in the uterus, and thence, extends continuously into the two tubes; we can easily see that at the place where the mucous is changed into a serous membrane, in-

flammation causes the secretion of a lymphatic fluid, which unites the fimbriated edges of the tubes, and thus, abnormally, closes one or both of them.

I ought to mention, also, that everything which may cause or excite inflammation, or may irritate idiopathically or sympathetically, the genital organs of the female, may produce sterility, by diminishing the cavity of the tubal orifice, or by causing the entire obliteration of the tubes; this also occurs simply by the presence of mucus, or other foreign bodies, in the passage ; but it is as difficult to detect these as it is to remedy them. It is with a view to cleanse these tubes, and to favor the displacement of foreign bodies which might interrupt the continuity of their channels, that I have frequently attempted, and not without difficulty, but sometimes with unexpected success, to introduce injections into them, by means of sounds properly arranged.

ARTICLE II.

Sterility dependent on General Causes Inherent in the Constitution of the Female.

In order to conform to the plan adopted in stating the causes of sterility in man, we refer also to two principal heads—that is, to physiological and pathological causes, all the circumstances which may give rise to this kind of sterility in the female.

§ I.—PHYSIOLOGICAL DISPOSITIONS.

1. *Ages.*—The period during which the female possesses the reproductive faculty, is naturally marked by a function, which fixes its duration, as it were, in an absolute manner. But before the full period of menstruation has passed, the genital organs are frequently nullified by the progress of age. In fact, many females present apparently all the physiological conditions required for conception, but are unable to become mothers, because the uterine system loses the degree of vitality which must render it fit for fecundation. This kind of sterility seems especially to await the female who does not enter the married state till she has attained a certain age, and when the want of exercise of the genital organs has absolutely enfeebled the reproductive life, so as to annihilate its functions. Thus, for instance, a female who marries at forty years of age, conceives with much more difficulty than she who is married at twenty, although both have the same sexual attributes.

Sterility depending on late marriage has often been treated, successfully, by stimulants of the uterine system, especially by sulphurous douches on the loins, flying blisters, anaphrodisiac liniments, &c.; but it is proper to wait for the employment of these remedies, as well as for the congress of the sexes, till after menstruation has occurred, because then the uterus possesses a certain degree of excitement, and its ori-

fice, being partly open, permits the admission of the semen.

2. *Temperament.*—The uniformity of temperament and of constitution, which forms one of the principal characters of the female organization, seems to render it tributary to the same laws. The sanguineo-lymphatic temperament with which it is generally endowed, appears also to be more favorable to conception, and hence it has been remarked that those females who vary the most from this temperament are most subject to sterility.

Those females who have a vivid, ardent temperament, and who have a *masculine* form, a term applied by Horace to Sappho, are especially liable to sterility. We know also that females of a delicate constitution, with soft and loose fibres, and of excessive embonpoint, are generally sterile. Hippocrates thinks that the uterus is chilled by the fat around it, and its orifices are then obliterated so as not to permit the penetration of the seminal fluid. But we think that we have given a just explanation of sterility produced by such a cause, by attributing it to an excess of nutrition in the other systems of the individual.

Regarded solely in respect to the sensibility of the genital system, the temperament may be a frequent cause of sterility. Thus an erotic, ardent temperament, more justly termed uterine by the learned Haller, seems to be less favorable to fecundation than a temperament less sensitive to the enjoyments of love.

If fecundation requires on the part of the man ardent desires, it demands of the female only pleasant complaisance and tender affections. Look, for instance, at those sterile females who are sometimes vivacious, ardent, and irritable, and sometimes, on the contrary, cold, indolent, and inaccessible to love. They are, for the most part, in opposite physiological conditions, while it has been remarked that those females placed between the two extremes, that is, who have a constitution both sanguineous and lymphatic, and a moderate degree of embonpoint, and passions rather amiable than violent, are the most liable to conceive, and make the best mothers.

The principal steps in the treatment of sterility from the causes we have mentioned, are to modify the genital sensibility, either by moderating the excess of the venereal orgasm, or by soliciting the fluids toward the uterine system when vitality is distributed unequally over the economy. This treatment has already been indicated before, and should be modified according to the special sensibility of the patient, observing faithfully the adage of the ancients, which is here true,—Contraria contrariis curantur.

§ II.—PATHOLOGICAL DISPOSITIONS.

When speaking of sterility in the male, we have seen that different pathological circumstances may render his genital organs impotent; but this is not the case with the female, in whom reproduction is still far-

ther removed from morbid influences. Every day, in fact, we see females give marks of fecundity even when affected with phthisis, scrofulous, scorbutic, venereal, and other diseases which endanger their own life, and that of the fetus. All the efforts of the physician, then, should tend solely to this latter object, and marriage should not be recommended nor can healthy and vigorous children be expected, till these affections are successfully treated.

CHAPTER III.

Of Pharmacology applied particularly to the genital apparatus, to modify the vital properties which govern their functions.

GENERATION supposes not only the physical integrity of the organs specially devoted to this function, but it also requires certain physiological conditions, which art can not always detect. The different alterations of the vital properties which preside over this function, may be reduced to three states—increase, diminution, and abolition. Although hygiene may, in both cases, supply the physician with powerful therapeutic means, we must admit it to be insufficient in a great many cases, where we are obliged to use different substances which belong to the materia medica. All the substances employed by the profession to regulate the type of sensibility of the genital organs, are naturally divided into two classes: the first are generally termed *temperant* remedies, and are composed of substances called cooling, emollients, gummy emulsives, opiates, &c. As most of them are known both in their physical, as well as in their medical characters, we have not thought it necessary to examine them particularly; but this is not the case with those composing the second class, which are usually termed *aphro-*

disiacs, and which seem to us to merit a particular description.

§ 1.—SUBSTANCES USED TO DIRECT THE FLUIDS TO, AND PRESERVE THE VITAL PROPERTIES IN, THE GENITAL ORGANS OF THE TWO SEXES.

Some physicians have denied the existence of aphrodisiacs, but without reason, as may be seen by observing what occurs in animals. We know that marum excites cats, as do also, catmint, valerian, and Virginia snake-root; and hempseed, fenugreck, &c., render birds salacious.

Aphrodisiacs are much sought after, especially in warm climates, where they are used particularly by the Orientals, because the heat, polygamy, and excesses of every kind, soon diminish, and even destroy their virile powers. Certain aromatic odors excite the uterine system in many females.

We are all familiar with the history of one of the wives of Jacob, who used an aphrodisiac, and about which Bible commentators have disputed much, as to what plant was used, although now it is generally regarded as the mandrake.

The three kingdoms of nature contain aphrodisiac substances—1, in the mineral kingdom we find the ætites or eagle-stone, a carbonate of iron, the astroites or star-stone, a carbonate of lime, sea-salt, borax, &c.; 2, in the vegetable kingdom, several varieties of the mushroom have aphrodisiac properties, especially truf-

fles, and morels, or red mushrooms, the ginseng of Japan, vanilla, salep, cacao, asparagus, certain of the alliaceæ, the root of John of Lopez, the cardamoms, and the arum, the aristolochiœ, the laurels, canella, the muscadine, laurea persea, opium, cloves, several balsams, oils or essences, and other vegetable substances, which act more or less powerfully. The animal kingdom presents a great number of these substances. The fluids, and even the odor, of the sexual organs, are powerful aphrodisiacs. The same may be said of musk, castor, civet, sincus officinalis, a kind of lizard which feeds on insects, and the hawk's-bill turtle; the last two act on the urinary and sexual organs, as do other fishes which contain phosphorus. The cuttle-fish, the pulp, the periwinkle, the oysters, and other bivalves—crabs, lobsters, shrimps, and most of the crustaceæ, enjoy the same qualities; and for this reason they are used so freely by the Venetians and Florentines.

1. *Vegetable Kingdom.*

(Stalks, Leaves, and Flowers.)

1. The *Summer Savory* (*Satureia Hortensis*), of the natural family of the labiatœ, corolla with five nearly equal lobes, stamina distant, stalk two decimeters high and frequently more, and a little reddish; leaves lanceolate, linear; flowers small, reddish, axillary, gemellar on each peduncle. This plant grows naturally in the

dry places of the southern provinces, and is cultivated in our gardens. It is an annual.

Properties.—The summer savory has been classed, and with reason, among stimulating medicines. I use the whole plant in infusion, and the powder in different doses.

2. The *Catnip* (*Nepeta Cataria*), of the natural family of the labiatœ; calyx cylindrical, with five dentated teeth, the stalk from six to ten decimeters high, and quadrangular, leaves petioled, cordate, tooth-serrate, green above, white underneath; flowers in whorled spikes; color, generally purplish, sometimes white. It is found on the edges of roads, in damp places. Perennial.

Properties.—This plant has a strong odor; and for this reason, is much sought after by some animals, especially cats, in whom it seems to develop venereal desires; hence, it is termed catnip, or catmint. I use the whole plant, but more particularly the flowers.

3. The *Mint* (*Menthæ*), of the natural family of the labiatœ, present the following characters: corolla a little longer than the calyx, with four nearly equal lobes, that of the centre being a little broader, stamens equal, erect, distant. We distinguish two varieties of mint, viz.:—

(1.) The *Mentha Crispa*, the flowers of which are in long, continuous, and terminal spikes, the leaves serrated and hairy, especially underneath. This is distinguished, also, from the *Mentha Rotundifolia*, as

in this latter, the stamens stand out from the corolla, while in this variety, they are within it. This plant is found among rubbish, which is moist, and near walls. It is perennial.

The *Mentha Crispa* has a very marked smell and taste, and, for this reason, has been placed among the stimulant remedies. I use the whole plant.

(2.) The *Peppermint* (*Mentha Piperita*) differs from the preceding by the following characters: its pedicles are always glabrous, its stalk is from three to six decimeters high, straight, and glabrous; its leaves ovate-oblong, acute, serrate, rounded-crenate at the base, petioled, and smooth; flowers small, and reddish; stamens shorter than the corolla; calyx striate, It is a native of England.

Properties.—These are extremely analogous to those of the preceding, but its action is more powerful, and its smell and taste more marked.

4. *Asparagus* (*Asparagus Officinalis*), of the natural family of the asparagi; flowers pedunculated, of a yellowish green, arranged at the origin of the branches; the stalk straight, round, green, and panuled at its upper part; its leaves are linear, soft, and arranged by from two to five in fasciculi, at the base of which we find an extremely small membranous stipule; the root is round, and gives off radicles. It is perennial, and is easily propagated by dividing the roots.

Properties.—The root of this plant has long been classed among the diuretics, and several pharmacolo-

gists have placed it among those substances, which increase the secretion of semen. The young stalks, and all the green parts of the plant, possess this property in an eminent degree. In some cases, I have derived much benefit from its use.

5. The *Cineraria Siberica*, of the natural family compositœ, order corymbiferœ; flowers radiated, the tubular floscular flowers are hermaphrodites, while the semi-floscular flowers are fertile; the aigretts are simple and sessile; the unvolucrin is composed of several petioles, also, arranged in one row; the flowers are terminal; the stalk is about one metre high, simple, striated, very smooth, and a little purplish at the base; the petiolated leaves are entirely smooth; the radical leaves are rounded. This plant is perennial. It grows in the marshes near the mountains. It flowers at the beginning of summer. It is found near the Eastern Pyrenees, &c.

Properties.—This plant has very great virtue as increasing the secretion of semen. I use the whole plant, except the root.

6. The *Brasica Eruca*, of the natural family of the cruciferœ, order siliquosœ, flowers with four cruciform petals of a pale yellow color marked with violet and blackish veins; the stalk is five decimetres high; its leaves are long, petiolate, tender green, and almost glabrous. This plant is an annual; it grows in the fields and uncultivated places in the south of France.

Properties.—The rocket is a powerful aphrodisiac,

consecrated to Venus by the ancients, as may be seen by this line from Martial:—

"Excitui ad venerem tardos eruca maritos."

I have obtained marked effects from the use of this plant, and recommended for use the leaves at the time of flowering.

7. The *Eryngo* (*Eryngium Campestre*), of the natural family of the umbilliferœ; flowers arranged in umbels, the petals of which are oblong; the umbels terminal, small, and very numerous; the fruit oval, oblong; the stalk grows about three decimetres high; it is straight, cylindrical, striated, whitish; its leaves are hard, green, and nervous. This plant is remarkable, resembling in in some respects a thistle, although it has all the character of the umbilliferœ. It is perennial, and is seen on the edges of roads, and in barren plains.

Properties.—Of this plant we use only the root, which is classed among the diuretics, emmenagogues, and aphrodisiacs. It generally presents at its upper part a mass of hair formed by the remnant of the leaves of the preceding year: they are remarkable especially in spring, before the plant has put forth its new leaves, and these fibres have given it the name of goat's beard.

8. The *common avens, herb Bennet,—geum urbanum*, of the natural family of the rosaceœ. Tube of the calyx concave; limb five-cleft, externally five-bracteolate; petals five; stamens numerous; carpel

juiceless, tailed, disposed in a head; style after flowering, articulate or barbed; seed ascending; leaves variously pinnatisect; stem erect, branched, hairy, usually five decimetres high; stipules somewhat orbicular, large; petals obovate, as long as the calyx; styles smooth with somewhat hairy appendices. The root long, size of a large quill, and surrounded by numerous reddish radicles of an astringent taste, and an odor similar to that of the gelliflower. This plant is perennial and grows in woods.

Properties.—Of this plant I use only the root, which has a bitter and austere taste, which it imparts to boiling water, wine, and alcohol. Most naturalists have arranged it among the tonics; but it seems to act as an aphrodisiac, and favors the accumulation of the blood in the genital organs.

9. The *Actæa Racemosa*, of the natural family of the ranunculaceœ; corolla with four petals; calices with four caducus follicles. This plant is perennial, and is found naturally in South America; it occurs also in Virginia, Canada, &c.

Properties.—Of this plant I only use the root dry, and in small doses: it has an acrid taste and a fetid odor; when employed carefully it is a powerful aphrodisiac.

10. *Salep* comes to us from Turkey and Persia, and is furnished by several species of the orchis, as the *orchis mascula* and the *orchis morio*, of the natural family of the orchideœ: the stygma is convex, and

placed forward of the style; the anther is in two compartments at its summit; the pollen forms two oblong masses; the fruit is a capsule with three valves, which open with three longitudinal fissures, and contain a large number of seeds. These plants are perennial.

The salep, as it comes from Turkey and Persia, is in small ovoid balls, strung on a piece of thread like a rosary: they are of a yellowish gray color and semi-transparent, and of a horny fracture: salep has a feeble odor which arises from the melilot; its taste is mucilaginous and slightly saltish; it contains a great deal of starch, and is powdered with great difficulty; it is used most generally in the latter state.

Properties.—The powder of salep is of a yellowish white, and readily unites with water; its molecules suck in this liquid, which soon acquires a glutinous consistence.

The salep must be arranged among the analeptic and aphrodisiac remedies: incorporated in a great number of preparations it is an excellent remedy from which I have obtained very fortunate results, especially in cases of exhaustion and marasmus.

11. The *root of John of Lopez* (*radix Lopeziana*).—The vegetable which furnishes this root is unknown, and its name belongs to a Portuguese traveller who first introduced it into Europe. The tree to which it belongs grows in the East Indies. This root which varies much in size, comes in the form of sticks, some-

times eight inches long and two inches in diameter: in some cases it is a ligneous trunk which measures from five to six inches in diameter: the wood is of a yellowish blue, lighter than water, and susceptible of receiving a fine polish. This root has a bitter taste: it is inodorous; its bark is brown, compact, bitter, and covered with a yellow, spongy, and downy epidermis. This root is very scarce and dear, and it is a good aphrodisiac, which I have introduced into several of my formulæ. I give it sometimes mixed in powder, at other times in infusion and decoction.

12. The *Convolvulus Scoparius.*—This substance, which several authors regard as a root, because, in fact, it presents all the external characters of one, has also been termed Bois du Roses, from its perfume. Latterly it has been brought from the Canary islands, where it is furnished by an arborescent creeper, of the natural family of the convolvulacœ, one or two inches in size, whitish and reddish yellow internally: it has an odor of roses, which is very perceptible when it is crushed; its taste is slightly bitter; it sometimes ignites at the approach of a lighted candle; the heaviest and most deeply colored should be chosen. We obtain from this wood by distillation a volatile oil of a very strong odor, which is somewhat analogous to that of the rose.

Properties.—This substance, which has been arranged among the class of tonic and stimulating drugs, is a good anaphrodisiac. I have often used its alco-

holic tincture, its essential oil ; I also employ the aqueous or vinous infusion, &c.

13. *Japan Ginseng* (*Sium Ninzi*, *panax quinquefolium*).—The natural history of the ginseng root is still a subject of dispute with naturalists. Some attribute the ginseng of Japan to the *sium ninzi*, of the family of the umbelliferœ ; others consider it as belonging to the *panax quinquefolium*, very near the former. As we do not propose to enter into a discussion of the question here, we shall simply point out the characters which distinguish this root. It is about two inches long ; its size is most generally that of the little finger ; it is a little knotty, brilliant, and semi-transparent, often divided into two branches, sometimes, into a great many twigs ; it is fibrous toward its base, reddish outside, yellowish inside ; its taste is slightly acrid, a little bitter, and aromatic, and of a peculiar odor, which is not disagreeable. This root is rare in Europe.

Properties.—Without admitting the wonderful statements made by the Chinese in regard to this plant, it certainly enjoys aphrodisiac qualities in a very great degree ; we have used it with success in tincture, in aqueous and vinous infusion, in cases of muscular debility, exhaustion, and marasmus. Hence, it enters as an essential principle, in preparations which have for their object, to excite the genital organs, which have been abused by premature indulgence.

14. *Truffles* (*Tuber Cibarium*, *Lycoperdon Tuber*),

of the natural family of mushrooms, are fleshy, rounded, subterranean tubercles, which present internally veins directed in different directions. They are almost entirely destitute of root, and differ from the lycoperdon, in which Linnæus had classed them, as they are not filled with dust.

The *Tuber Cibarium* is of a blackish or gray color, destitute of any kind of radicle; its external surface presents small, and almost prismatic, and warty eminences; its parenchyma is firm, and is not changed by drying; of this, we distinguish three varieties—the black, gray, and violet. The first is black outside and blackish inside, where it presents reddish lines arranged in a network; the second is at first whitish, and then becomes an ashy brown; the third is usually a dark violet. The truffle delights in light and gravelly soil, especially in forests planted with oaks and chestnuts, and is covered by about two centimeters of soil; its odor is so penetrating as to be perceptible to hogs and dogs for some distance, and it is by these animals that the peasants detect its localities.

Properties.—The odor and taste of the truffles are so pleasant that they are sought after by bon vivants. Taken as food, they soon show their stimulating effects on the genital system. Employed as a medicine, they have an aphrodisiac power, which is very well suited to persons of a lymphatic temperament.

15. The *Alliaceæ*, of the natural family of the iliaceæ, flowers terminal, umbellated. They pos-

sess, and justly, the reputation of being excellent aphrodisiacs. The *Allium Sativum*, in particular, seems to be eminently endowed with this power. Its odor penetrates all the tissues and fluids of the different secretions, in persons who use it, and seems to exercise special influence on the genital organs of both sexes, as Martial has stated in the following distich :—

> " Qui prœstare verim Cypriœ certamine nescit,
> Manducet bulbos, et bene fortis erit."

16. The *Amomum Cardamomum.*

17. *Amomum Grana Paradisi.*—The two plants which furnish these fruits belong to the natural family of the zingeberaceæ. The first is seen in the East-Indies, on the coast of Malabar, and in the island of Java; the second grows in Africa, and its fruit is called maniguette, or, grains of Paradise. The fruit of the amomum cardamomum has the form of a membranous and papyraceous triangular capsule, with three partitions, each containing ten irregularly shaped seeds, somewhat analogous to cochineal. These seeds have a piquant taste, and a strong and aromatic odor. The amomum grana paradisi has the same form as the preceding, is of a grayish brown color, and has a camphorated smell. It is also larger.

Properties.—These two fruits have stimulant properties, which manifest themselves particularly on the genital system. I generally combine them with other substances, to increase, or to modify their effects,

according to the particular disposition of the subjects.

18. *Seeds* of the *Vitex Agnus Castus.*—The tree which furnishes these seeds belongs to the natural family of the pyrenaceæ, which resemble the labiatæ, but differs by the irregular tabular corolla, of a violet or purple color; the calyx is short and whitish; the stamens are prominent. The agnus castus grows naturally in moist places of the southern provinces. It is odoriferous in all its parts.

The fruit—the only part of the plant used, is round, and of the size of those of a pepper, blackish at the upper part, and covered inferiorly by the calyx, which is permanent. When entire, they have a pleasant odor; but when broken, their smell is very disagreeable. They have an acrid and aromatic taste.

Properties.—The name of this plant indicates the properties ascribed to it by the ancients. And they prepared from it a syrup, used to abate passion, in monasteries. It is always difficult to conceive that a substance, so aromatic, can have any effect, except to excite the genital organs. The experience of some modern physicians militates against this doctrine. I use the seeds of this latter plant in aqueous, vinous, and alcoholic infusion; and I have them in several of my formulæ.

19. *Seeds of the Cacao Theobroma.*—The tree which furnishes these seeds belongs to the natural family of the malvaceæ, and grows in South America. The

fruit in which the seeds are contained, has the form of a cucumber; it is filled with a pulp, which contains a hundred seeds, similar to the almond—the interior of which is brown, and is divided into irregular lobes, separated by small white membranes. After the fruit is cooked, the seeds are removed; they are then dried, and kept in the earth for several weeks, so that they may lose their acidity.

The cacao most esteemed is the Caraccas, which comes from Nicaragua and Caraccas, on the Pacific Ocean. The Caraccas may be known by the grayish color of the epidermis, which adheres very slightly to the nut, which color it receives from being plunged in the earth for some time, to abstract from it its oleaginous principles. It is also rounder, its color is violet red internally, its taste is pleasant and agreeable, and it contains less oil than the other cacao.

Properties.—The cacao, especially that from Caraccas, has highly nutritive and stimulant properties. It is very useful in all cases of atony and consumption, when it is desirable to stimulate the organs, to excite that action which regulates nutrition, and to increase the spermatic secretion. I use the cacao under different forms, sometimes in powder or in pastiles, sometimes with sugar and vanilla, in the form of chocolate, and sometimes I combine it with salep and aromatic substances.

20. The *Vanilla*, the fruit of the *epidendrum vanilla*, of the natural family of the orchideœ, is found in Mexico

and Peru : it occurs also in Cuba, Jamaica, and St. Domingo. The plant has a root in the earth, but the stalk is furnished with little radicles, which are inserted in the bark of the trees near it, which thus serve to nourish and support it, so that it may continue to vegetate after it is removed from the ground.

The *Epidendrum Vanilla* is cultivated in Mexico with great care, and we distinguish three varieties which produce three different fruits. One is larger and shorter, another small and long; the third is longer than the other two, and is almost inodorous. The vanilla has a straight pod, of a reddish brown color, corrugated in its length, and curved at its base; it is flexible, often covered with a white crystalline and needle-shaped effloresence which arises from the benzoic acid which comes from it. It contains a soft oily blackish pulp, in which are a large number of black round and shining seeds. The vanilla contains a volatile oil and some benzoic acid, whence it derives its aromatic principles; its taste is sweet and lasting; its odor exquisite, and hence it is much used in confectionery.

Properties.—Vanilla is classed, and justly, among the stimulating drugs; taken in substance, in a proper vehicle, even in small doses, it excites the mucous membrane of the stomach, which communicates its action sympathetically and almost suddenly to the brain, and all the organs of sense dependant on it. Taken in large doses this substance carries into the blood

principles which cause the same excitement in all the systems of organic life, and especially in the genital apparatus to which it causes a greater afflux of blood; thus it acts both as an aphrodisiac and emmenagogue.

I introduce this substance into many internal remedies and external applications. I administer it also in substance, either alone or combined with other medicines in vinous and alcoholic infusions; in both cases I incorporate the oil obtained from it in pommades, liniments, &c.

21. *Opium*, the juice of the *papaver somniferum*, of the natural family of the papaveraceœ, is obtained by the expression or decoction of the plant, and is imported in the form of round cakes, from four to sixteen ounces in weight, which are covered with leaves of the poppy or other narcotic plants. We ought to select dry and pure pieces, which have a clean and shining fracture, strong and powerful odor, bitter, nauseous, acrid, and permanent taste; it ought to be soluble in great proportion in water, soften under the fingers, and burn readily.

Properties.—Opium should not be employed as an aphrodisiac, except in very rare cases, and with the utmost discretion. For although the Orientals use it to excite to the contests of Mars and Venus, its prolonged use finally depresses and even destroys the genital powers entirely.

22. Balsam of Mecca (*Balsamum Meccanense*).

23. Balsam of Tula (*Balsamum Tolutanum*).

24. Balsam of Peru (*Balsamum Peruvianum*).

25. Balsam of Benzoin (*Balsamum Benzoeum*).

We shall include under one head our remarks on the four balsams which resemble each other in their physiological action.

1. The *balsam of Mecca*, termed more properly *Mecca turpentine*, is furnished by the amiris opobalsamum, of the family of the terebintaceœ, which grows naturally in Arabia Felix, and is cultivated in Egypt and Judea. This terebinth or liquid resin is procured either by incisions in the trunk or branches, or by boiling the twigs and leaves in water: that obtained by incision is the finest: it is seldom seen in Europe. That commonly found presents the following characters: it is fluid, of a very agreeable and peculiar odor, whitish and opaque when fresh, but becomes yellow and transparent by age, and at the same time grows dense and afterward solid.

2. The *balsam of Tolu* is obtained from the balsamum toluifera, the natural family of the terebintaceœ, a tree growing in South America, not far from Carthagena. This balsam is procured from the trunk of a tree by incisions made in it. It is generally solid, dry, and fragile when cold, but when exposed to heat it becomes semi-fluid, and runs easily, and forms a single mass. The color is a reddish yellow, semi-transparent; its odor is extremely pleasant, and it has some analogy with a lemon; its taste is sweet and agreeable; it softens under the teeth, and becomes ductile, and

when thrown on coals it burns and gives out a white aromatic and very agreeable smoke; it is entirely soluble in alcohol, or ether, and water removes from it a great deal of benzoic acid, when at the temperature of a sand-bath. In commerce, balsam of Tolu is generally contained in large earthern bottles, and more rarely in small calebashes; in the latter case it is softer, purer, and sweeter, and is then sold for the balsam of Peru.

3. The *balsam of Peru* is derived from the myroxilon peruiferum of Linnæus, or from the myrospermum peruiferum of Lamark and Jussieu, which have been found to be identical. It is a large tree, belonging to the natural family of the leguminosœ, which grows in Peru, Brazil, and other parts of South America. There are three varieties of the balsam of Peru: 1. the *white;* 2. the *red;* 3. the *black.* The first is liquid and almost transparent, and is obtained by incisions in the trunk of the tree. The second is solid, is collected in the same manner as the preceding. These two species are extremely rare in Europe: they are generally imported in calebashes, and are much esteemed for their purity and sweetness. The third is the most common: it is fluid, of a syrupy consistence, of a very deep brownish reddish color, strong and very agreeable odor; its taste is acrid, bitter, and disagreeable, by which it is distinguished from the balsam of Tolu; it is entirely soluble in alcohol, and burns, when thrown on coals, with a thick smoke; it gives

off a great part of its benzoic acid to boiling water. When it remains a long time in a vessel, small white crystals of benzoic acid are deposited on its sides.

4. *Benzoin* is a solid balsam which comes from the styrax benzoin, of the natural family of the ebenaceœ. This tree grows in the southern part of the island of Sumatra. It is also found in Java and Siam, and the benzoin flows from incisions made in the bark of the tree: at first it is liquid and whitish, but it soon becomes colored and solidified by the contact of the air: it is asserted that each tree will give about three pounds, and the incisions may be continued for three or four consecutive years.

There are two kinds of benzoin known in commerce—the amigdaloid benzoin, and the sorted benzoin. The first is the purest and most esteemed, and is thus called as it comes in ovoid whitish tears, similar to almonds agglomerated in a brown and reddish paste; the second is less pure, and presents a nearly uniform brownish tint. This balsam has a very agreeable odor, somewhat similar to that of the balsam of Peru; its taste is aromatic, slightly acidulated and acrid; its fracture is clean, shining, and vitreous; it is friable; it breaks under the teeth, and when thrown on live coals, it melts, burns, and gives off a thick whitish smoke, emitting a very strong odor, and irritating the throat. This smoke, when received and condensed in cold vessels, forms white crystals of benzoic acid. Benzoin is soluble in ether and alcohol; water then

precipitates its solution; from this is prepared virgins' milk, a cosmetic preparation much used to render the skin smooth.

Properties.—The four balsams just described, have very stimulant properties. When applied to living parts, they stimulate them, and develop in them an increase of vitality, and accelerate their motion. In confining ourselves to their effects on the genital system, we observe they modify the vital powers sensibly. Administered internally, or applied externally, they stimulate the surfaces with which they come in contact, and excite the genital organs to a greater or less extent. We observe, however, that their action is more marked as it is exercised directly on the genital organs, and on the parts intimately connected with them. Thus, in certain cases of anaphrodisia, I have employed, with unusual success, plasters composed of these four balsams, or in combination with other substances, with which I cover the lumbar region.

26. The Cubeba (*Piper Cubeba*), also, deserves a passing notice, known, as it has been, from high antiquity, and many think that the *Carpesium* of Galen, the pepper of Hippocrates, and the round pepper of Theophrastus, all allude to this plant. The cubebs has been known in France and England for five hundred years. It is a native of Java, and the Prince of Wales' Island. Its stem is shrubby, terete, and climbing; the leaves petiolate, oblong, acuminate; peduncles almost equal to the petiole; berries with elon-

gated peduncles. In appearance, cubebs resemble black pepper, except that they are lighter colored, and are each furnished with a stalk two or three lines long; within it, is a hard, spherical seed, which is whitish and oily. The taste of cubebs is acrid and peppery; its odor is aromatic.

Cubebs seem to exercise a specific influence on the genito-urinary apparatus; and are much used by the Indians, who macerate them in wine, and take them to excite the genital system. Mr. Crawford says that in Malay countries, they are given in doses of three drachms, six or eight times during the day. I am satisfied that in many cases of sterility, cubebs may be a useful remedy.

2. *Animal Kingdom.*

27. The cantharides, an insect, of the natural family of the coleopteræ, is from six to seven lines long, and from two to three broad; of a green color, with black antennæ. It is found in June and July, on several plants, where it is readily detected by its strong and disagreeable odor. This insect inhabits a great part of Europe, but is found in the southern parts, where it is gathered, killed by exposure to the vapor of vinegar, and then dried.

Properties.—Cantharides have an acrid and caustic taste, a disagreeable and very penetrating odor; the powder of these insects, applied to the skin and mucous surfaces, promptly causes very marked inflam-

mation; if taken internally, and in large doses, it exercises the same action as irritating poisons, and causes all their symptoms; as severe pain in the epigastrium, internal thirst, nausea, vomiting, severe colics, bloody dejections, hematuria, attended in man with obstinate and painful priapism, &c. Its use has sometimes caused death. Ambrose Paré relates the case of an abbe, who, to prove his powers, took a large dose of powdered cantharides—and died from it. Notwithstanding the danger attending its use, several physicians have prescribed it internally, to excite the urinary organs, in cases of dropsy, and atony of the bladder, or to induce the action of the genital organs, in cases of impotence. But the accidents which may attend or follow its administration, should lead to the greatest care in its use. I prefer the external application of this remedy, as the same effects may be obtained without presenting the same inconveniences.

28. The *Castoreum* is the product of a particular secretion furnished by the castor fiber of Linnæus, of the class mammalia, order rodentia, inhabiting the north of Europe and America. They are also seen in France, Prussia, Poland, and Germany, but they live alone, and have none of the industrious habits of those dwelling in societies. The castor is secreted in two pyriform glandular pouches, situated at the under part of the skin of the abdomen, near the prepuce, and which has been confounded with the testes of the animal. The fluid they contain is liquid, yellowish,

and syrupy. In commerce, it is found in the pouches in which it is secreted, and one of which is always larger than the other. When removed from the animal, the castor is solid, has an acrid and bitter taste, strong, and even fetid odor, a blackish color externally, and yellowish internally. Its fracture is resinous, and intermingled with whitish membranes. When recent, it preserves a certain degree of softness, and is then more odoriferous, and more sapid. But we must not confound this softness with that resulting from the action of moisture, to which the castor is exposed, and which is generally caused by the beginning of putrefaction. To avoid error in this respect, I advise to use the driest and most odoriferous.

Properties.—The castor possesses excitant and anti-anaphrodisiac properties. When administered in substance, in ethereal and alcoholic tinctures, &c., it is particularly proper for delicate and nervous persons.

29. Ambergris, *Ambra Cinerea.*

30. Civet, *Zibethum.*

31. Musk, *Moschus.*

As these last three medicines are endowed with the same mode of action, it seems proper to describe them in the same article.

(1.) Ambergris is a peculiar substance, which some naturalists consider as the excrementitious matter of the cachelot, physeter macrocephalus, of the class mammalia, order cetaceæ, inhabiting the polar seas. It only forms in cases of disease. It is found floating

on the water, near Madagascar, Coromandel, the Moluccas, and Japan. This matter seems to have been liquid on its first formation, for it is often found in fishes and other marine animals. Ambergris comes in irregular, rounded masses, formed by layers of at least a pound in weight, and sometimes in much larger masses. The matter is solid, lighter than water, softening and melting like wax, by the aid of heat. Its color is gray, spotted with yellow and black, of a pleasant odor, very sweet and very expansible, almost entirely soluble in alcohol. This substance is rare and costly.

(2.) Civet is furnished by two animals, of the class mammalia, termed viverra civetta, and viverra zibetta. It is secreted by glands, and deposited in a membranous pouch, situated between the anus and the genital organs. The animals which secrete it, are found in the warmest parts of Africa, and Asia, where they are bred very carefully; in Abyssinia, also, some proprietors have three hundred of them. The civet is removed, by a spoon, from the pouch charged to receive the product of this secretion, and is kept in vessels closed hermetically.

Civet is a semi-fluid, unctuous, whitish material, becoming brown and thick in the air, and has a very strong and disagreeable odor. In composition, it is somewhat similar to the castor.

(3.) Musk is furnished by the moschus moschiferus, of the class mammalia, order ruminantia. It is con-

tained in a pouch situated near the genital organs, in front of the prepuce. Musk is strong in the animals inhabiting Thibet and China, and infinitely less so in those living in northern countries. The pouch for receiving the product of this secretion, does not fill till adult life, and this secretion occurs at the period of rutting. Musk has a semi-fluid consistence in the living animal; but when it is separated, it becomes almost solid, unctuous to the touch, and of a blackish brown color, like coagulated blood. It has a bitter, aromatic taste, and a strong peculiar odor, which is very diffusible, and difficult to bear when concentrated, but pleasant when it is slight.

Two kinds of musk are known in commerce—that of Tonquin is contained in pouches, the skin of which is yellow; and that of Bengal, or rather of Thibet, known as kabardin, the skin of which is whitish and silvery. The latter is dry, less odorous, and its odor approximates to that of the aromatic plants, and it is less esteemed than the preceding.

Properties.—These three substances have very remarkable stimulant properties; their strong, penetrating, and extremely diffusible odor, renders them very proper to act in a special manner on the brain, and to develop, in the whole organism, phenomena of reaction, which manifest themselves especially on the genital system. To attain this latter end, I have employed them with equal success, either internally in the form of powders, potions, and pills, or externally

in the form of liniments, or pommades, to remedy the sterility which seems to result from an asthenic state of the sexual organs.

Although there are still a great number of substances capable of increasing the vital properties of the sexual system, we have confined our examination to those whose effects seemed more apparent. We might mention many other medicines, which have been regarded as producing the same effect; but they act only from their stimulant properties; they are uncertain in their results, and dangerous in their application.

DIFFERENT PREPARATIONS USED EXTERNALLY FOR STERILITY.

Asterasic Bath.

℞	Tinct. Benzoin,	℥ x	
	Tinct. Ginseng,	℥ jv	
	Tinct. Cineraria Siber.,	℥ ij	
	Ambergris,	ʒ ss	
	Ol. Rosar,	℈ j	Mix.

Uses.—The fluid is poured into the bath a few minutes before it is wanted, using only half the quantity above mentioned, in the first four or five baths, which should be taken 26 to 30° of Reaumur.

Another Bath.

℞ Tinct. Genievre,
Tinct. Calami Aromat,. āā ℥ iij
Tinct. Menth. Pip., ℥ ij
Tinct. Muscad., ℥ iss
Tinct. Ginseng, ℥ jv
Spir. Rosmaria, ʒ ij Mix.

Asterasic Girdle.

Bals. Peru,
Bals. Gilead, āā ℥ iv

Put these two balsams in a glass retort, adapt to them a tube and a receiver, and distil with a gentle fire until you have obtained, in essential oil, a thirty-second part of the weight of these two balsams, or, two drachms of the above mixture. Put aside this first product of the secretion, and continue to distil till there remains in the alembic only a vitrifiable, resinous matter. Put aside this second product of distillation, and keep it in well-stopped vials, to use in other preparations, particularly for the asterasic pommade.

On four ounces of the vitreous residue, add, after it is softened by fire, two drachms of essential oil, composed of equal parts of the following:—

Essence of Rhodes wood;
Essence, the first product of the distillation of the two balsams;
Pure essence of Neroli;
Essence of bergamotte;
Essence of Vanilla.

Liquify this emplastic mixture at a moderate temperature, and then spread it upon muslin, which has previously been sized by two layers of pure gelatine. The plaster should then be backed with silk or satin, to prevent the plaster from oozing through the cloth and sticking to the clothes, and also to concentrate its action on the part to which it is applied.

These girdles should be about fifteen inches long, and five broad—sometimes even larger than this.

When prepared, they should be rolled up with silk paper, slightly moistened with sweet oil, to prevent the adhesion of the surfaces; and then placed in a case, to preserve the odorous substances from alteration.

To increase the action of these girdles, I increase the proportion of the aromatic substances, add others, as musk, canella, ambergris, &c.

These girdles should be applied to the lumbar region, directly above the insertion of the glutœi muscles, or the crests of the ossa ilia.

First anti-Anaphrodisiac Liniment.

℞	Balsam of Metz,		℥ j
	Oil of Cantharides,		℥ ss
	Oil of Rhodiola,		℥ ij
	Essence of Neroli,	āā	ʒ j
	Essence of Bermagotte,		
	Musk,	āā	grs. jv
	Ambergris,		

Mix and make an ointment.

Second anti-Anaphrodisiac Liniment.

℞ Oil of Mint, } āā ℥ ij
Oil of Ginseng, }
Oil of Cardamom, ʒ j
Tincture of Root of Actœa Racemosa, ℥ j
Essence of Vanilla, }
Essence of Canella, }
Essence of Rhodiola, } āā ʒ j
Essence of Sage, }
Essence of Lavender, }
Mix and form liniment.

Third anti-Anaphrodisiac Liniment.

Anodyne Balsam of Bates, } āā ℥ ij ss
Opodeldoc, }
Oil of Mace, }
Oil of Mint, }
Oil of Vanilla, } ăā ʒ ij
Oil of Rhodiola, }
Mix and form a Liniment.

Compound Tincture of Benzoin.

Alcohol, ℥ xv
Distilled Water, ℥ vj
Liquid Balsam of Peru, ℥ j
Liquid Balsam of Tolu, ℥ jv

Distil in sand bath, after macerating for eight days, until you have obtained fourteen ounces; then digest for a month in the product of distillation,

Benzoin, ℥ jv

previously reduced to an impalpable powder, and then filter.

First Asterasic Pommade.

℞ Rose Ointment, } āā 3 iij
Extract of Kino, }

Extract of Ginseng, } āā 3 ij
Extract of Cardamom, }

Second product of distillation for girdles, 3 ss

Essence of Marjoram, } āā gtt xij
Balsam of Mecca, }

Mix so as to obtain a perfectly homogeneous paste.

Second Asterasic Pommade.

℞ Extract of Vanilla, }
Extract of Ginseng, } āā 3 ij
Extract of Cineraria Siber., }

Palm Oil, } āā 3 iij ss
Rose Ointment, }

Second product of distillation for girdles, ℈ j

Essence of pure Neroli, } āā gtt xij
Essence of Rhodiola, }

Civet, grs. ij

Mix as before.

DIFFERENT PREPARATIONS EMPLOYED INTERNALLY FOR STERILITY.

Royal Essence.

Ambergris,		grs. 48
Musk,		℈ j
Civet,		grs. x
Oil of Canella,		grs. xvij
Oil of Rhodes' Wood,		grs. vj
Oil of Roses,	āā	gtt vj
Oil of Orange Flowers,		
Alcohol,		℥ ij
Carbonate of Potash,		gtt. vij

Triturate together the amber, musk, civet, and carbonate of Potash. Place this mixture in a flask, with the alcohol with which the mortar has been washed out, add the volatile oils, and digest for fifteen days, or leave the alcohol in it. Decanter, filter, and take by drops. Use it also as a lotion.

Oriental Essence.

Canella,	℥ iij
Cardamom,	℥ ij
Galanga,	℥ iss
Ginger,	ʒ iij
Pepper,	ʒ iij
Nutmegs,	ʒ iij
Musk,	℈ j
Ambergris,	grs. xx
Alcohol,	℔ ij

Pulverize all the substances, except the ambergris and musk, which you must triturate separately, in alcohol. Place the whole in a flask, and digest for fifteen days. Filter, and use as before.

Anti-Anaphrodisiac Syrup, principally for men.

Ginseng Root,	℥ iij	
Cinerariæ Siberiæ,	℥ j	
Vanillæ,	℔ j	
Seeds of Cardamom, minor and Major, āā	℥ ij	
Root of John of Lopez,	℥ ss	
Cacao,	℥ vj	
White Sugar,	℔ ij	
Musk, Civet, āā	q. s.	
Ambergris,	ʒ ss	Mix.

Anti-Anaphrodisiac Syrup, principally for Females.

Ginseng Root,	℥ j
Root of John of Lopez,	℥ ij
Persian Salep,	℥ ss
Wood of Rhodiola,	℥ j
Black Truffles,	℥ ij
Leaves of the Cataria,	℥ j
Vanilla,	ʒ jv
Seeds of Cardamom,	℥ ij
White Sugar,	℔ ij
Musk and Civet, āā	q. s.
Ambergris,	℈ j

Macerate all these substances in wine for fifteen days, then filter very carefully, and add the alcoholic

product of distillation. Bottle and cork up very carefully.

These two syrups should be prepared so as to retain all the extractive and volatile principles. Notwithstanding the difficulties attending their manufacture, M. Regnault, druggist, at Rue de Rivoli, No. 29, has found a mode which is extremely satisfactory.

It may not be out of place to mention that these two preparations may be modified in accordance with the different physiological or pathological circumstances. Thus I have often found it necessary to leave out the musk and civet, which seem to exert an unfavorable influence, even in many cases which were apparently the same.

Asterasic Pastilles.

℞	Cacao,	℥ jv
	Ginseng Root,	ʒ jv
	Vanilla,	ʒ ix
	Canella,	ʒ ij
	Root of Actœa Racemosa,	ʒ j
	Sugar,	℔ j
	Musk,	℈ j
	Ambergris,	ʒ ss
	Gum Tragacanth,	q. s.

Make a mass to be divided into 1000 pastilles, to be dried for use.

Tonic Asterasic Wine.

Root of Zedoair,	℥ ij
Seeds of Agnus Castus,	ʒ vj
Cascarilla Bark,	℥ j
Balsam of Acorus Calamus,	ʒ vj
Alcohol,	℥ viij
Water,	℔ j

Macerate for fifteen days, and distil in sand bath, to obtain eight ounces of distilled product.

Dried Squill,		ʒ vj
Rhubarb,		℥ j
Ginseng,		℥ iss
Canella,		℥ iij
Leaves of Cineraria,		℥ iij
Carbonate of Potash, Salt of Wormwood,	āā	℥ j
Chablis Wine,		℔ xij

Macerate these substances in wine for fifteen days, then filter carefully, add to the liquor the alcoholic product of distillation, bottle it, and cork it tightly.

Anti-Anaphrodisiac Marmalade.

℞	Butter of Cacao,	℥ iss
	Manna,	℥ j
	Powdered Gum Arabic, Anti-Anaphrodisiac Extract,	āā ʒ jv
	Extract of Quinquina,	ʒ ij
	Extract of Saffron,	ʒ ss
	Laudanum,	grs. xij
	Orange Flower Water,	℥ ss
	Syrup of Balsam of Tolu,	q. s.

To make a Marmalade, or Paste.

A spoonful of this to be taken morning and evening, the dose to be increased gradually to six spoonfuls, taken during the day, two or three hours before or after eating.

Cachunde, Indian Pastilles.

Powdered Wood of Aloes,	ʒ ij grs. xxviij
Powdered Red Sandal Wood,	ʒ jx grs. vj
Powdered Yellow Sandal Wood,	℈ ij
Powdered Galanga, Powdered Calamus Aromaticus,	āā grs. xxxij
Powdered Rhubarb,	℈ j
Powdered Wormwood,	ʒ ss
Powdered Canella,	ʒ jv
Powdered Mace,	ʒ ij
Alcohol,	℥ vj

Make a Tincture, filter, evaporate to the consistence of syrup, and then add the following powders:

Carbonate of Magnesia,	ʒ jv gr. 52
Amber,	ʒ iij grs. x
Musk, and Amber, āā	℈ j
Essence of Roses,	℈ ss
Vanilla Sugar,	℥ ij
Powdered Sugar,	℔ j
Mucilage of Gum Tragacanth, q. s.	

To make pastilles of five grains weight. Take six daily—two in the morning, on empty stomach, and two before going to bed. The number may be increased to twelve daily.

Modified Pastilles.

Powdered Ginseng, Vanilla,	āā	ʒ ss
Mace, Nutmeg, Girofle,	āā	ʒ ijss
White Sugar,		℔ j
Essence of Canilla,		gtt xij
Essence of Amber,		gtt viij
Mucilage of Gum Tragacanth, g. s.		

To make pastilles of six grains each, eight or ten to be used daily.

Indian Wakaba.

Canella powdered,	ʒ ss
Cacao,	ʒ ss
Sugar,	ʒ jv
Vanilla Sugar,	ʒ ss
Roucou dried,	℈ j
Mix and make a powder.	

Take a dessert-spoonful in a cup of myrtle tea, or water, before going to bed.

Imperial Powder.

Powder of Canella,		ʒ viij
Powder of Ginger, Powder of Girofle, Powder of Galanga, Powder of Nutmeg,	āā	ʒ iss
Musk,		grs. vj
Powdered Sugar,		ʒ viij

Take like the preceding.

Phosphoric Preparation.

Essence of Rosemary, ℥ j
Phosphorus, grs. xij

Place them in a flask, and hold over a lamp till the phosphorus has dissolved entirely; then add, while the solution is warm, an ounce of oil of sweet almonds.—To rub the sexual organs.

N. B.—The asterasic extracts, pills, and tinctures, are composed of substances which we have mentioned before, and are modified according to the patients.

I here conclude the formulæ which are most used in my practice. I have not stated the different modifications of which they are susceptible, because these vary according to the physiological conditions of the patients.

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