

tact with the nerve leading to the muscles of the limb of another frog, *one* nerve was excited by galvanism, the muscles of both limbs were thrown into contraction. Matteucci, on carefully and frequently repeating this experiment, found, that excitation of one nerve never produced contraction in the muscles of the other limb, unless the nerve of that limb was included in the galvanic circle formed in exciting the nerve of the other limb. The direct excitation of the nerves of both limbs by galvanism must therefore have taken place in Humboldt's experiment, and it therefore differs entirely in its nature from that performed by Matteucci.

J. R.

(To be concluded in next Number.)

Traité Philosophique et Clinique d'Ophthalmologie, basé sur les principes de la Thérapeutique Dynamique. Par M. F. ROGNETTA, M.D., Professor, &c. &c. Pp. 724, 8vo. Paris.

(A Philosophical and Practical Treatise on Ophthalmology, based upon the principles of Therapeutics. By M. F. ROGNETTA, M.D., &c. &c.)

A somewhat careful survey of M. Rognetta's elaborate work enables us very decidedly to express our conviction, that its plan and execution vindicate the high pretensions of its title. It is truly a philosophical and practical Treatise on Ophthalmic Science, and based on the somewhat novel, and, we should think, valuable therapeutic principles of the Italian school. The author's acquaintance with the literature of the subject, from the times of Celsus to the present day, appears accurate and complete, comprehending the standard works of the different countries of Europe. To say nothing of French authors, his knowledge of those of Germany is respectable, and of those of Italy and England intimate. The works of John Hunter, Lawrence, Travers, Mackenzie, Tyrrell, Middlemore, and others, are quoted like household words; and as a proof of how much he maintains himself on the level of present discussion, we mention, that we were not a little gratified to find our own pages frequently referred to. The work is at once comprehensive, and, notwithstanding its great length, condensed. It is a second edition, though this does not appear on the title-page; and has thus had the advantage of revision and correction. We are convinced that it will stand an honourable comparison with our best modern treatises on the science, and that no one who wishes an acquaintance with what is valuable on the subject, will willingly be destitute of so copious and judicious a help. We are aware that these statements are decidedly eulogistic; but they are the genuine expression of our unbiassed impressions; and we care not to withhold them, or rather, we feel that it is only an act of justice to express them. Did space allow, a careful review would, we think, demonstrate their accuracy to the satisfaction of every one. All we can attempt, however, is a slight synopsis, with a few casual illustrations; but sufficient, we trust, to enable the reader to form his own judgment.

The Treatise is divided into four parts, including, 1st, The General Pathology and Therapeutics of Eye Diseases; 2d, Those diseases which affect the whole organ; 3d, Those which affect its individual parts, or tissues; and 4th, Those which affect the appendages. The parts occupy, respectively, 60, 170, 406, and 82 pages.

A general estimate of the author's style may be formed from his leading paragraph:—"The ocular apparatus may be considered as a direct emanation, or prolongation of the brain. In fact, the eye may be viewed by the anatomist as a kind of miniature brain. Like the encephalon, it possesses a protecting osseous case, (the orbit), completed by a fibro-membranous apparatus, (the eye-lids). Like the cerebrum, it also possesses a fibrous covering, (the sclerotic); a second, which is vascular and serous, (the choroidea); and thirdly, an essentially organic portion, medullary or nervous, (the retina). Remark also that portion of the cerebral pulp which is prolonged in the sheath of the optic nerve, and which expands itself in the deepest part of the organ; likewise, that

considerable artery, which there penetrates it, (A. centralis), and which so strikingly corresponds to the basilar artery; also those numerous nerves, which form a great sphere round the eye, and some of whose branches penetrate its interior; and finally, those magnificent meshes of arteries which supply the ball, the orbit, and surrounding parts, corresponding to the carotid plexuses. All these resemblances naturally lead to the conclusion, that one of the chief causes of eye diseases is to be found in the brain itself, or, at all events, in those constituent elements of the eye which proceed from within the cranium. I am in the habit of, in this way, regarding many of these diseases as affections which are allied to a morbid state of the encephalon, and am often delighted with the practical and beneficial results these views reveal." Pp. 1, 2.

After remarking that the diseases of the heart, and their effects on the circulation, also those of the lungs, have a powerful influence on diseases of the eye, the author observes, that after all, it is in the eye itself, and especially in its coats, that we are to look for the phenomena of diseased function, and the manifestation of diseased structure.

The second chapter of this part of the treatise is occupied with the *Dynamic Conditions* of the eye; and as this doctrine bears upon disease generally, and presents views with which some of our readers may not be familiar, we shall for a moment dwell upon it. Every malady in which there is a simple lesion of the vital forces, such as exaltation, diminution, perversion, &c.—in a word, of the normal rhythm of the functions of the eye, without structural change, is denominated dynamic; in other words, it is inherent in the vital powers of the tissues. Examples of this are to be found in ophthalmia, simple amaurotic affections, photophobia, &c. By vital power, or vitality, is here understood nothing more than organic sensibility and irritability, which have the ganglionic system of nerves as representatives—the agency which produces contractions of the heart and arteries, and which assimilates the food. This ganglionic system, which presides over the functions of vegetable life, communicates, as is well known, with the cerebro-spinal system, by means of the intercostal nerves; and this accounts for the reaction which certain medicines produce upon the brain and the spinal cord, after they have acted upon the other system. The sensorial nerves themselves, and the retina in particular, owe their animal flexibility to the influence of fibriles, which they receive from the ganglionic system, as will be more minutely shown hereafter.

If then we ascend, as we ought always to do, from morbid phenomena to the source of their production,—to the organ tissues affected, we shall easily verify the true state of matters. What, in fact, do we find in these affections? In the ophthalmiæ for example, we find the same conditions as in the phlogoses of the other organs; namely, anormal vascular congestion, accompanied with redness, swelling, &c.—an exaltation of the functional rhythm, with an increased flow of tears and other secretions, also increased sensibility, aversion to light, heat, and febrile action. These, in a general way, constitute what, in the Italian school, is called, the *pathological basis*, or *condition*. In this case the condition is unambiguous, every one recognizing that it is of the nature of excitation. In a second example which we may select, (amaurotic affections,) different conditions may present themselves. And frequently this disease is also dynamic, sometimes at the same time being of an asthenic nature. This second dynamic condition is generally encountered in individuals who are exposed to certain morbid poisons, such as belladonna, hemlock, &c. &c. These causes do not operate upon the eye only, but also upon the whole frame. The morbid condition they produce is like the preceding, wholly functional or vital, and consists in a deficiency of stimulation. These two methods of action will be readily understood by reflecting a little upon the vital conditions which constitute the normal condition of the functions. For the normal state of these functions there must be a determined amount of stimulation; the organic life by whose powers these functions are performed being nothing more than the result of the action and reaction of the stimuli upon sensibility. Beyond this amount there is excess of stimulation, and over excitement, and consequently a tendency to the diseases of excitation. On this side of the amount, on the contrary, debility pre-

vails, and a tendency to asthenic disorders. In both alternatives the functions are deranged, and this derangement, in its origin purely vital, by excess or defect of stimulus, constitutes precisely the dynamic state of disease. M. Giacomini has designated the former condition, *hypersthenic*, and the latter, *hyposthenic*—denominations now generally adopted. P. 10.

The next two chapters are occupied with the *Mecanico-dynamic Conditions* of the eye, and the general nature of the diseases of the organ. Under the latter, we have a short discussion concerning ocular therapeutics,—one of the most practical and important subjects which the author considers; endeavouring to vindicate for it the attention it merits, and is so far from receiving. Rejoicing in the advance of pathology, and diagnosis, he contends that therapeutics should not be treated as a mere subordinate appendage, and be left in the hands of naturalists and of chemists. The former of these classes forms its judgment upon the physical and local action of a drug; and if it stimulates the mouth, or is bitter, or excites the skin, concludes that it is a tonic or a stimulant. Hence the immense number of this kind of remedies. But it ought to be observed, that in addition to the local effects, many of these medicines exercise another and far more important agency,—one which is developed only after they are absorbed into the circulating fluid, and so act upon the organic functions. Hence the dynamic action of drugs upon the several functions requires to be carefully studied. This forms a study which is comparatively new: it is now carefully cultivated in Italy, and has as yet extended little beyond it. The chemist, again, regards the human frame far too much in the light of a common retort, and imagines that medicines pass through both machines very much alike. Hence the origin of chemical neutrals, which the author very much regards as the destruction of *materia medica*. The dynamic power being very much misunderstood, it is clear, that the *materia medica* it has borrowed from the dreams of the laboratory, are leading us away in a false direction. Ophthalmology has experienced its own share of these unfortunate results, as its special are borrowed from general therapeutics. The fact, however, is, that the therapeutic action of drugs is wholly independent of chemistry, and belongs to the province of physiological observation, and clinical research.

Considerations of this nature lead to the next chapter, on General Therapeutics, (Chap. V). The remedies here enumerated are arranged under three heads; namely: tonic, or exciting remedies;—antiphlogistic, or hyposthenic, and revulsive remedies. We may mention that, under the last of these heads are considered the subjects of cupping, and other local bleeding, warm bathing, general and local, rubefacients, and blistering, and purgatives, and the style in which they are discussed will appear from the following summary. “It follows, 1st, That one of the most essential points in the diagnosis of eye, as of other diseases, is the determination of the pathological condition. This is generally dynamic, though sometimes mechanic, and sometimes *mecanico-dynamic*. The character of the dynamic state is usually *hypersthenic*; the diseases resulting from genuine weakness being rare. 2d, That very frequently there is a connection between ophthalmic disorders, whether acute or chronic, and a diseased state, it may be of the brain, or heart, or of the whole organism. This morbid condition often consists in an occasional or habitual hyperæmia; so that our examination should not be confined to the eye, but should extend to the functional condition of all the organs. 3d, That in the examination of the eye we cannot bestow too much attention upon the state of the choroid coat, which is often congested, and the source of many ophthalmic affections. This state is usually accompanied with a sense of fulness in the organ, with headach, and a certain anormal fulness of the bulb. The surgeon, therefore, should carefully examine it with his fore and middle finger,—should feel the eye as he feels the pulse, gently compressing it, and comparing its condition with the normal one. 4th, That it is always the enveloping membranes which require special attention in dynamic affections, since the dioptric apparatus has a low degree of vitality. 5th, That in the graver diseases of the eye, local remedies are insufficient for the cure. 6th, That constitutional treatment alone often suffices for a

number of these diseases, if it be sufficiently extensive, guided by true dynamic principles, and with suitable energy. This by no means interferes with the use of local remedies. 7th, That in the ophthalmic, bleeding alone may be insufficient, if plethora be not present, and the constitution be affected with scrofula, chlorosis, &c. Direct hyposthenic remedies must then be used. The sufferings of the patient will not, under these circumstances, be alleviated by opiates alone. 8th, That purgatives are useful in all hyposthenic diseases of the eye, and less as evacnants, than as direct hyposthenic remedies. They are injurious where there is true ocular weakness. 9th, That in the most severe ophthalmia, such as phlegmon on the eye, and ophthalmia purulenta, we ought to trust not so much to local as to general remedies: venesection alone may be insufficient. To this must be added emetic tartar, belladonna, and especially nitrate of potash, whose efficacy is very great." P. 31.

The sixth chapter is devoted to a careful consideration of collyria,—gaseous, liquid,—and metallic, including the salts of silver, mercury, copper, lead, zinc, potash and soda;—also vegetable and animal applications. We cannot attempt to quote any of the author's remarks, however judicious. As a mere specimen, we extract his remarks respecting cold water, which show, as it relates to hydropathy at least, that there is nothing new under the sun on this point. The case of the venerable Morgagni cannot be read without interest. "In acute inflammation of the conjunctiva, says the Italian physician, the cornea is prone to ulcerate, so that I was much afraid of this calamity, when I suffered at Bologne from an obstinate attack, which was so severe as often to prevent me from sleeping, especially if I did not apply a cataplasm of apple-pulp to my eye-lids. Many remedies were recommended, one of which—cold water, though for a time inconsiderately neglected, I have often found most useful since. Its efficiency was strikingly exhibited in the case of a fellow-citizen, who having, by its means, been cured of an inflammation of the right eye, was soon after seized with an inflammation of the left eye, and after trying many other remedies fruitlessly, was again cured by this one. If you enquire how, for so long a time, I have been free from this disorder, notwithstanding so long continued and constant application, night and day, I must tell you it has been by practising repeated ablution with water fresh from the well, especially in the morning. This water is sufficiently cold to preserve the powers of fibres which have been enfeebled by previous ophthalmia. Delharding some time ago published a work entitled *Prophylactic Specific for Diseases of the Eye*,—which specific was cold water. Morgagni adds, that, at the end of forty years, having neglected his usual remedy, his disease recurred, and he was cured only by returning to it. Celsus is another authority on the same point." P. 50.

An interesting disquisition on glasses (chap. viii.) terminates this first part of the work.

AFFECTIONS OF THE WHOLE GLOBE constitutes the second, which is arranged under seventeen chapters. These are on *Strabismus*, on which there is an able essay, extending to 36 pages, *Traumatic Lesions*, including extra-orbital contusions, *Luxations of the Eye*. *Concussion*, producing *Paralysis of the Retina*, *Luxation of the Lens*, *Rupture of the Iris*, *Cicular Apoplexy*, including *Hyperæmia*, *Extra-Orbital Wounds*, *Lesion of the Periorbital Nerves*, *Periorbital Fractures*, *Palpebral Emphysema*, *Intra-Orbital Wounds of the Periorbium*, *Lacrimal Gland*, *Optic Nerves*, and the *Muscles*; *Wounds of the Globe*, non-penetrating and penetrating, of the *Sclerotica*, and *Cornea*; the *Introduction of Foreign Bodies*; *Burns*; the *Pavaritis* of the eye, *O. Phlegmonosa*, *Hydrophthalmia*, *Atrophy*, *Myopia*, *Presbyopia*, *Diplopia*, *Cicular Neuralgia*, *Spasmodic Affections*, *Ossifications*, *Cithiosis*, *Cancerous Affections*, *Excision of the Eye*, *Artificial Eye*, *Melanosis*, and lastly, *Congenital Affections*, *Anophthalmia*, or want of the eye, *Cyclopia*, *Microphthalmia*, *Congenital Opacities of the Cornea*, *Absence of the Iris*, *Eye-Lids*, &c.

As a specimen of the execution of this part of the work, we give the subsection on lesion of the periorbital nerves. "An immense number of facts prove that certain wounds of the superciliary, frontal, suborbital and naso-palatine nerves, may produce amaurosis. Dr Mackenzie explains the phenomenon by

referring it to the concussion of the retina, which he believes always exists in these cases; and Mr Tyrrell is of the same opinion. This idea, however, is incorrect; for the blindness does not always occur at the moment of the injury, and often only when cicatrization has been completed. Thus, a young man fell from his horse and wounded the eyebrow across the course of the frontal nerve; where a piece of glass, remaining at the bottom of the wound, produced suppuration. At first the vision was impaired only, but in a short time it was entirely lost.—(Dupuytren.) By the overturn of a carriage, a lady was slightly wounded on the forehead and temple. She immediately became amaurotic; but the disease proved temporary.—(Morgagni.) The lady of a physician of Bologna presented a case which ran precisely the same course; the amaurosis here proceeding on the moment, from a cock having pecked her on the eyebrow.—(Valsalva.) Another individual became amaurotic from a wound over his left eye-brow; but here the blindness was permanent.—(Lawrence.) In another case ambiopia only supervened.—(Ibid.) In two military men blindness succeeded to a slight wound on the part from fire-arms.—(Hennen.) A similar case was more lately witnessed at Algiers.—(Baudens.) The celebrated Abernethy became hemiopic after fracture of the nasal bone, and this from injury of the naso-palatine branch. Wardrop witnessed blindness as the result of a suppurating wound at the lower part of the orbit, and I have witnessed a similar instance in a child. Beer, Weller, Guthrie, and many others report similar cases. Sabatier, in quoting Hippocrates's observations on the obscurity of sight arising from wounds of these parts, introduces also a case mentioned by Camevevius; and others in which slight wounds of the upper eye-lid, near the inner angle, or apparently of the conjunctiva, have been followed by loss of vision on the affected side. La Motte mentions a similar occurrence from the wound of the outer angle; and Hildonus supplies a similar case. Duret and Hoccillier confirm the latter of these statements. Very d'Azir states, that a young surgeon having been struck by the point of a foil immediately on the frontal nerve, entirely lost his sight; the blindness coming on gradually, and being finally complete. From these observations, then, it appears that blindness may supervene from injury of the frontal and nasal nerves." P. 122.

The third part of the treatise is introduced by a summary account of ophthalmic dynamic remedies, one of the most novel, and we should think most important parts of the work; being an able sketch of the new doctrines of the Italian school on this matter. There is brought under review the specific action, general and local, of belladonna, strychnia, mercury, antimony, nitrate of potash, hemlock, digitalis, tobacco, coffee, ergot, turpentine, camphor, quinine, iron, and mineral waters, and lastly, of purgatives. The author's views with regard to the action of mercury, do not appear to be so satisfactory as those which have long ago been propounded by our countrymen Saunders and Dr Farre. We quote some of his conclusions with regard to belladonna. 1st, Wherever belladonna is applied, it produces its effects by absorption, after passing into the circulation: they are most marked on the eye in the vicinity of which it is applied. 2d, These effects are always dynamic or constitutional, apparently operating on the ganglionic system, and consequently upon the sensitive principle of the animal fibre of all organs. 3d, The heart and arteries are very sensitive of these effects through the influence of the ganglionic nerves. 4th, The more vascular an organ, the more responsive is it to the effects of the belladonna; so it is with the brain, eye, and lungs. 5th, The nature of the action of belladonna is hyposthenic, weakening, antiphlogistic, and may be compared to venesection, digitalis, tartrate of antimony, &c. 6th, Its true antidotes are stimulants, ethers, alcohol, opium, &c. 7th, The action of opium being opposite to that of belladonna, they should not be prescribed together. 8th, Belladonna may be usefully employed in the treatment of all inflammatory complaints. It may safely be prescribed so long as its administration is regulated by the law of tolerance. 9th, The action of belladonna on the eye is wholly dynamic, and affects chiefly the blood-vessels; the whole eye, with its muscles, and even the eye-lids, at the same time, experiencing its antisthenic effects. The weakness induced on the retina may be compared to senile amaurosis. 10th, Of the different parts

of the eye, the iris and the ciliary body are the first to own its power, and experience it most. P. 247.

Respecting the nitrate of potash, the author makes the following observations: "With tartrate of antimony and mercury we class the nitrate of potash as a remedy, internal and external, for the treatment of ophthalmia and other serious hyposthenic affections of the eye. I often even prefer it to them, as it never produces vomiting, nor ptyalism. Given in a full dose, this medicine reduces the pulse astonishingly. Its hyposthenic action is so remarkable, that if you do not watch its effects, it will induce decided intoxication, as I have sometimes witnessed, and as details in the *Annales de Thérapeutique*, T. i., clearly prove. I prescribe the nitrate in doses of one or more scruples (grammes) a-day, in small and repeated doses, mixed with honey, or dissolved, when administered, in lemonade. When fever is present, it may be given to the extent of four or five drachms, or even to double that quantity. It is unnecessary to weigh every dose, a couple of ounces (30 or 40 grammes) may be ordered in powder, and half a tea-cupful may be given every hour or second hour. It may also be sprinkled on emollient poultices, and placed over the eyes, especially during the night." (P. 253.)

The third, by much the largest portion of the work, divided into 44 chapters, is occupied with a distinct description of the numerous and varied diseases which affect the conjunctiva, the other membranes of the eye, including artificial pupil, cataract, and amaurosis. It would occupy much space even to enumerate the several diseases which are comprehended in the list, and our closing space prohibits us from describing any of them. The anatomy and physiology of the different tissues precedes the pathology, in our view by much the best arrangement which can be adopted, and which at the same time adds greatly to the general interest of the whole.

The fourth part comprehends the diseases of the appendages,—the orbit and marginal apparatus, and the eye-lid; and gives an interesting description of these important complaints. As a specimen, we conclude with the leading paragraph to the pathological anatomy of encysted tumours occurring in the orbit. "It has been proved that the substance generally contained in these encysted tumours is only a secretion of the envelope which encloses them. In fact, the cysts are truly accidental secretory organs which germinate in the economy, under the influence of certain causes. If one cyst, for example, encloses a fluid limpid like water, or albumen, and another a substance thick as honey or fat; this difference is owing to the nature of the cyst. It is also proved that the primary growth of cysts is not owing to the successive agglutination of the laminae of cellular tissue, distended and compressed together by a heteroplastic matter, as Hunter and Louis taught. It is moreover, incontestible, that these organs of new formation, are themselves susceptible of diseases analogous to those of the normal parts they most resemble, and chiefly to phlogosis, (*Gendrin, Hist. Anat. de l'infl.*) What is still more remarkable, is, that the internal phlogosis of the cysts, when excited to a certain extent, may produce false membranes; these false membranes again become organized, and form shut sacs concentric to the first. Nor can we deny the products of a purulent membrane, in a purulent cyst. These conditions also belong to cysts which enclose hair and teeth. Pathological physiology truly demonstrated that these may be produced accidentally, and by an operation quite inexplicable by the laws of formation, dental or crinigenous organs appearing in unwonted regions of the body, analogous to those which are not unfrequently found in the scalp and maxillary bones. Some pathologists have even been able to trace, step by step, the different phases which these albuminous cysts undergo whilst engendering the accidental teeth, or other parts. (*Lobstein Anat. Path.*) Another important circumstance is, that in general the outer surface of these cysts is purely cellular, flabby, and slightly adhering to the surrounding parts, so that they can be easily dissected, enucleated, or torn out, whilst the internal or secretory surface is smooth, close, and more or less mammillary. I have touched on these pathological points because there is scarcely a known cyst, melicerous, hydatid, steatomatous, which has not been seen in the cavity of the orbit.

Before proceeding further we shall cite some of the more remarkable of these cases,”—P. 646.

Here, however, we cannot follow our author, and must conclude. We are aware that from a few scanty specimens like these, it is not easy to form a judgment of the well-arranged whole. We trust, however, we have vindicated the correctness of the encomium we passed at the head of this article. We feel grateful to M. Rognetta for the pleasure and profit we have derived from his work. We mean to place it for reference in a handy corner of our own shelves, and we should not stand excused if we had not put it within the power of our readers to consider whether they would not wish to do the same.

PART THIRD.

PERISCOPE.

PHYSIOLOGY.

ANALYSIS OF THE MILK OF A HE-GOAT. By J. SCHLOSSBERGER, M.D., formerly Assistant Physician to the Catherine Hospital of Stuttgart, and now Assistant Teacher in Professor Gregory's Laboratory of Research, in the University of Edinburgh.

In no department of her works does nature exhibit more striking and varied deviations from the normal condition, than in the organization that is destined for the propagation of species, and the nourishment of the young. This remark applies to the whole class of hermaphrodite productions, and includes the mammary system, as well as the more special organs of generation. Among the rarer examples belonging to this category, must be included the instances in which the males of animals have supplied their offspring with milk. Medical literature furnishes two instances in which this phenomenon occurred in the human race. One of the most remarkable and best authenticated of these is that recorded by Baron Humboldt, as having occurred in America.¹ In this case the father, during the indisposition of the mother, suckled his child for five months, two or three times a-day, no other nourishment being supplied. The milky fluid in this instance was peculiarly sweet and thick. The other case is given by Häser.² Examples of this kind are more common among the lower animals. One occurred in a castrated ape;³ another in a bull with undeveloped testes;⁴ and several have been noticed occurring, as in the present instance, in the he-goat.⁵ In all these cases, although the inference that the

¹ Reise in die Äquinoctial gegenden. Stuttgart: 1815-19. Bd. ii. s. 40.

² Häser's Archiv., 1844, s. 272.

³ Stark's Archiv. für Geburtshülfe, iv. s. 755.

⁴ Homes' Lectures on Comp. Anat. Lon., 1814. Vol. iii. p. 326.

⁵ Bechstein's Gemeinnützige Naturgeschichte. Bd. i. s. 420, and Frorcip's Neue Notizen, 1843, Nro. 551. The latter case, however, according to the remark of an old Swiss, is not so rare, he once even prepared cheese from the milk of a he-goat; we shall see by and by that it is well fitted for the purpose.