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J. U. Amsby

A

TREATISE

UPON THE

SEMEIOLOGY OF THE EYE,

FOR THE

USE OF PHYSICIANS;

AND

OF THE COUNTENANCE,

FOR

CRIMINAL JURISPRUDENCE.

BY J. F. DANIEL LOBSTEIN, M. D.

Of the Faculty of Paris; late Physician of the Military Hospitals and Army of France; late Lecturer on Surgery and Midwifery, and second Physician and Accoucheur of the Civil Hospital at Strasburg in France; Corresponding Member of the Medical Societies of Paris, of Bordeaux, of Toulouse, and Marseilles; of the Latin and Mineralogical Society of Jena; Honorary Member of the Medical Societies of Philadelphia, of the City and County of New-York, of Massachusetts, of Maryland, of Lexington in Kentucky, of New-Orleans, of Pittsburg in Pennsylvania, and of several other learned and benevolent Societies of the United States of North America; Physician, and Practitioner in Midwifery in New-York.

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TO

SAMUEL L. MITCHILL, M. D. F.R.S. L. & E. Vice President of Rutgers College.
DAVID HOSACK, M.D. F.R.S. L. & E. Prof. of Theory & Practice of Phys. Rutgers Col.
FELIX PASCALIS, M. D. late Censor of the State Society of New-York.
JOHN W. FRANCIS, M. D. Professor of Obstetrics, Rutgers College.
WM. JAMES MACNEVEN, Professor of Materia Medica, Rutgers College.
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W. HORNER, M. D. Professor in the Pennsylvania University.
TH. T. HEWSON, M. D. Professor in the Pennsylvania University.
JOSHUA FISHER, M. D. Beverly, Massachusetts.

GENTLEMEN,

MY anxious desire is to preserve this work from oblivion. Ushered to the world under the auspices of your names, so deservedly conspicuous in the republic of medicine, I cannot but fondly cherish the hope, that it will receive that attention and patronage to which, from its intrinsic merits, I justly believe it entitled.

Deign, Gentlemen, to accept kindly in the spirit of that enthusiasm which venerates genius, the homage of my profound feelings of respect inspired by the admiration of your distinguished talents.

I am, GENTLEMEN,

With sentiments of the highest respect,

Your most obedient humble servant,

J. F. DANIEL LOBSTEIN, M. D.

Letter from Samuel L. Mitchill, M.D. *of New-York to* J. F. Daniel Lobstein.

New-York, *June* 23, 1829.

My dear Sir,

My curiosity was so excited by the parts of your manuscript which I examined on the Semeiology of the Eye, that I have entertained a desire ever since to peruse it more at length in print. That organ is so admirably supplied with blood-vessels, nerves, and muscles, that it exhibits a remarkable variety of symptoms. Its coats and humours give it much additional interest. The eyebrow, eyelash, and the more or less complete function of the lachrymal gland afford additional signs for the observer's notice. When its connexion with the will, the understanding, and the passions are taken into account, there is wide scope given to remark and description. All these matters, and more, seem to have been studied by you. When the sum of your own inquiries is increased by your profound and copious stores from books, I conclude, of course, that the reader will find a rich repast for his mind.

I am glad to learn that the business preparatory to publication is progressing so encouragingly, and hope the time is near when the *opus consummatum* will be duly before me. I feel a presage that your diligence, judgment, and erudition will be properly appreciated and rewarded.

With much good feeling and many good wishes, I remain,

Yours,

SAMUEL L. MITCHILL.

Letter from Felix Pascalis, M.D. *of New-York, to* J. F. Daniel Lobstein.

New-York, *April* 17, 1829.

My dear Sir,

I regret your prompt departure, in consequence of which I cannot read every part of your erudite manuscript on the Semeiology of the Human Eye. I say erudite, and classical in its composition as well as its principles. If so much has already been said by poets, philosophers, and other observers of human nature, it is time indeed that our physiologists and jurisconsults should turn their attention more to the eyes than they do: that is, to the delineation of diseases for the first, and of vices and crimes for the second. Artists, too, might gain much if they knew how many of the passions are graphically expressed by the human eye. I congratulate you, dear sir, for having had such favourable opportunities to collect so many valuable classical authorities as is evinced in your work. It is, however, to be apprehended that few readers here will understand and justly appreciate it. Still I hope that it may in time turn to your advantage, of which I make no doubt: one thing, indeed, nobody can ever deprive you of—it is the honour of having accomplished it alone, and being able, like you, to say at last—*mequoque raptat laudis amor.*

Please to accept, with my best wishes for your health and prosperity, the assurance of the high regard and esteem in which I remain respectfully,

My dear Sir, your friend,

FELIX PASCALIS.

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PREFACE.

As most authors are accustomed to present to their readers a preface explanatory of the motives which have led to their respective publications, the author of the present work considers himself entitled to the same privilege, and avails himself of it, to state, that to the present time, so far as he has been informed, no work has appeared in the *English language* which treats explicitly on the *Semeiology* of the eye, at least in a manner so *extensive* and *precise* as the work which he has now the honour to present to the judgment of the scientific public, especially to the *learned members of the different medical faculties of the United States of America*, whose literary acquirements and practical knowledge, render them equally eminent with the first physicians of Europe.

Professor Loebel, of Jena, acknowledged as one of the first physicians of Germany, who, unfortunately, however, for the enrichment of medical science, died too soon, published a work entitled: "*Ueber die Semiologie des auges, zum gebrauch fur aerzte;*" (on the Semeiology of the eye, for the use of physicians,) which, in 1818, the author of the present publication translated into French. The original work was received in Germany with the most marked approbation, and also in France, where the science of medicine is cultivated with the liveliest enthusiasm.

The author, for a period of twenty years, has directed his attention particularly to the changes which the eye presents, both in sickness and health. His inquiries were directed to this subject for some time *before* the publication of Professor Loebel appeared. The author, however, proposes to embrace in this work the practical observations of Professor Loebel, in order that he may pay to the memory of this distinguished physician, the merited compliment of introducing his useful and interesting labours to the attention of the enlightened physicians of this rising republic.

The present publication may, therefore, be regarded as possessing all the valuable practical information embraced in the original work of Professor Loebel, confirmed, illustrated, and enlarged by the numerous facts and observations derived from the experience of the author. He has also been induced to present this work from his firm conviction of its inestimable value to those gentlemen who are deeply interested in questions of jurisprudence, especially when he reflects on the success with which the professional gentlemen of this country have attempted the elucidation of the highly interesting subject of medical jurisprudence. He cannot but hope that his labours will be duly appreciated and patronised, not only by the members of the medical profession, but also by the justly distinguished and enlightened professional gentlemen of the bench and the bar, for whose information the nineteenth chapter of the present work has been expressly prepared, and to whose impartial judgment it is freely and confidently submitted.

The author is fully aware, that on many of the topics noticed in the introduction, and treated at large in the body of the work, much scepticism will prevail, even among the most enlightened and meritorious physicians, especially those who, heretofore, have not directed their attention to

this highly important subject, and who could not have been expected to interest themselves in an inquiry, which, until the present moment, had never been presented in the language of their country, and which was scarcely noticed in Europe until within a few years past. The author expects that his opinions will meet with much opposition, and receive their due share of criticism. All that he asks is, that his opponents may be influenced by a spirit of amity and good feeling, and that their criticisms may be marked by candour and impartiality. The judgment of the enlightened and liberal members of the profession will be respectfully submitted to, and their observations gratefully received.

For the opinion of *those* who think themselves capable of estimating, and who decide on the merits of a work from the mere perusal of its *title-page*, the author can entertain but little respect, and to all such he would remark, in the language of one of the most distinguished statesmen of this country, "that it is much easier to criticise a large work than to write a small one."

The author would rather encourage than restrain a free and liberal investigation of his opinions. He has assumed to himself the right of presenting his own views to the public, and it is foreign from his wishes to restrain the free expression of the opinions of others, should they even be at variance with his own. He will cheerfully abandon any opinion which may be proved to be erroneous, and will gratefully receive instruction when convinced by ample evidence of its accuracy.

The important aphorism of the wise and learned Bacon ought to be remembered and cherished by every physician:

"Non oportet nos ad hærere omnibus quæ audimus et legimus, sed examinare debemus districtissime sententias

majorum, ut addamus quæ eis defuerunt, et corrigamus, quæ errata sunt."

The importance of regarding with strict attention the changes which the eye presents in doubtful diseases, is amply acknowledged in the writings of the modern as well as the ancient pathologists, semeiologists, and therapeutists. Wilbrand gives in his Physiology an excellent judgment of the importance of the eye in diseases when he says: "Non seulement l'organe de la vue est par lui même sujet à une foule de maladies, mais le médecin observateur y découvre une infinité de nuances, qui'il reconnoit comme symptomes de maladies générales. L'œil de chaque malade est pour le médecin scrutateur, comme pour le moraliste et le philosophe qui a étudié la nature humaine, un organe bien important, que tous les trois doivent observer et étudier avec le plus grand soin pour le bien de l'humanité."

Should this work, as the author humbly trusts it may, be found to enlarge the present sphere of medical observation, by directing the attention of physicians to *new* views of semeiology, and should it also shed additional light on the important department of medical jurisprudence, he will feel amply rewarded for his labour.

THE AUTHOR.

INTRODUCTION.

It is in the central organ of the nervous system that intuition operates in the highest degree; it is there that the soul becomes acquainted with its existence. The optic nerves, which receive and conduct impressions made on the organ of vision, proceed from the brain, and after having reached its base, embrace the peduncle, from which they receive some fibrillæ, and then direct themselves inwardly.

The two nerves approach and meet each other upon the sella turcica, before the infundibulum, and, by uniting, they form a *ganglion.* The optic nerve becomes round afterwards, and takes its direction outside towards the optic hole, in which it enters at the base of the eye; it pierces the membranes, and expands itself to form the retina. This nervous cup appears to us the true seat of sensibility of the eye. We cannot doubt that the membrana hyaloidea, the glazed body, the case of the pellucid fluid of the eye, and the fluid itself, are endowed with a principle of life, which is rendered obvious by motions of contraction and expansion, and which are, according to chemistry, modified by the action of light and the laws of polarity. We observe, further, a vital activity in every organ. Why should it not be the same in the parts which compose the eye? It is precisely the life of these parts joined to the vital reaction of the brain, of the optic nerve, and retina of the eye,

which excites probably in the aqueous humour, and in the humour of Morgagni, a certain necessary oscillation, in order that the refraction of the luminous rays may operate after the same law.

It is not necessary to observe, that in the act of vision the functions of the iris, and other parts of the eye, act freely. The motions of contraction and expansion of the iris appear to prove it to us, as much by its vitality, as by the action of light and the laws of polarity.

After these data, and especially after observations still more exact, we may be able, perhaps, to explain the dilatation and contraction of the eyeball, a phenomenon which depends sometimes on the influence of the mind upon the iris, and sometimes on the momentary action of light and electricity.

Vision itself, according to our manner of seeing, can take place but by the concurrence of the solid brain, of the optic nerve of the eye with all its parts, of the rays of light, of exterior objects, and the laws of polarity. The life of the brain and eye, with its different parts, can alone give value to the laws of optics. In consequence of this, the act of vision is at one and the same time a process ideal, real, chymical, and mechanical, to which the laws of optics are subordinate.

My readers will do well to compare the remarks embraced in this slight sketch with the observations of the ingenious Goethe, Stiffers, Wagner, Hinly, and Troxler.

In the same respect, and according to the different conditions required for vision, being more or less realized, we see the mimic of the eyes change and express itself differently, as will be noticed more particularly hereafter in the semeiology of the eye itself. In addition to the above views we shall speak of that *intense internal* vision or pre-

sentiment, which Martin* describes so particularly in his account of the Western Islands in 1716.

It is likely that this interior and spiritual vision is rather a sympathetic intuition which exists in nature and appears sustained by facts, but which it is impossible to explain by philosophical deductions. Before occupying ourselves with the expression of the eye, as it is seen by this sort of inspired and exalted visionaries, we will relate some historical and incontestable facts on the subject: we shall speak only of presentiments and apparitions in the wakeful state of persons in good health as well as in sickness.

A certain Mrs. de Beaumont† relates, in the following terms, a very important fact on account of presentiment: "My father had an idea of taking an airing in a boat at Rouen; he spoke on this subject to a company, and they agreed unanimously to repair on water to Pont-saint-quea, four leagues from Rouen. All preparations were already made in the boat, and my father got ready to leave his room, to repair there, when, on a sudden, one of his aunts, who is deaf and dumb, put forth dreadful shrieks, threw herself through the party, stopt him in his way in stretching out her arms, and made him understand, by very expressive gestures, that he should not quit the house this day, nor his room. My father laughed at first at my aunt's entreaties, but as she threw herself at his feet, and expressed to him by signs and extraordinary motions the most profound grief, he resolved not to join the party, and endeavoured even in a serious manner to dissuade the company from it, at least for that day; but they laughed at him in their turn, and

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* Martin's Description of the Western Islands, 1716.

† Indem Allgemeinen Magazinder Litteratur und Kunst, 8ter. BS.S. 117.

they embarked gaily. However, scarcely had they made two leagues, laughing and joking, when the boat dashed on a sudden to pieces: many persons of the company found their grave in the waves; the few who escaped fell extremely sick through fright, and only remembered afterwards this party with horror."

The psychologists will take no less interest in the presentiment that the prince Frederick Francis of Wolfenbutld experienced, in 1758, in the camp of Wissembourg, when he foretold to his aid-de-camp, M. de Trusskow, that there would be a battle on such a day, and that he (the prince) would be killed in it.

The same happened with the presentiment which Louis the XI. had towards the close of his life, namely, that he would die on a Saturday. The sequel justified that presentiment, for he died on a Saturday.

To the presentiment we were just speaking of, is opposed that which we observe often during diseases.

Areteus, the Cappadocean,* says of certain sick persons: "their soul is firm, and without the least weakness, their senses pure and perfect, their mind penetrating, and disposed to foretell. They have not only the presentiment of their own death, but they foretell also to the persons present their future destiny; those who did not believe in these predictions were struck with amazement when they happened. This kind of sick persons have even conversations with the dead."

Suetonius,† in speaking of Octavius Augustus, informs us that his death was mild, but that during his sickness he rose on a sudden, complaining that forty young men carried him away against his will. He was really carried

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* De causis et signis morborum acut. Lib. II. c. 4.

† Indem Leben des Octavius Augustus, cap. 99.

away from his palace by forty men of the imperial guard.

Cicero* cites also an example from Possidonius, where a dying visionary foretold to several others their future destiny, in indicating the order in which several persons present of the same age would die one after the other.

Meier† relates of Professor Alex. Theoph. Baumgarten, from Frankfort on the Oder, that the 25th of May, 1762, consequently two days before his death, he said very positively that he would die in two days; but on the day even of his prediction he found himself a little better, and when his friends showed to him their pleasure at his speedy recovery, he said to them: "*you are mistaken; believe my experience of twelve years*, octo dies morior, *it is already six days that I am dead, there remain yet two to me.*" He died notwithstanding this presentiment, with the greatest serenity of mind.‡

We may read several other interesting historical facts of this kind, in the works of Venon Seviani, de Jean Nider, de Paul Zeising, de Henri de Herr, Michael Alberti and Schelwig.

The learned Professor Loebel, formerly professor of medicine at Jena, relates a remarkable example of this kind of presentiment in a sick person at Naumburg. A man named Huft fell suddenly sick with a gastric fever. He sent immediately for his physician, whom he requested to visit him very often, but not to prescribe him any medicine, since he would die infallibly the eighteenth day of his sickness. His relations and the doctor endeavoured to dissuade

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* Cicero, de divinat. I, 30.

† Meiers Leben A. G. Baumgarten, Halle, 1763, S. 27.

‡ Kemme von der Heiter Keit des geistes bey einigen Sterbenden. Halle, 1774.

him from this idea, and to act according to the voice of reason, but he smiled tranquilly, without changing his opinion. The seventh day, said Professor Loebel, he was called for, and consulted by his wife, besides his attending physician. He visited him, and endeavoured to comfort him, to inspire him with courage, and to dissuade him from the idea of death; but neither his exhortations, nor those of the clergyman, were able to remove this fatal presentiment. The tenth he made his will, with much firmness; he comforted his wife, and recommended to her fortitude of character in misfortune; he called his children around his bed, and exhorted them to virtue: after which he awaited quietly for the day of his death. To deceive him Professor Loebel displaced on his watch the hand which marked the days of the month, believing positively that he would not die on the fixed day. Professor Loebel went to see him in the morning of the eighteenth; his mind was calm, and he spoke to him very reasonably on different subjects, he was careful not to mention any thing in relation to his death. Professor Loebel took that day a particular interest to examine the eyes of the sick person; he found them bright indeed, but having nothing sad nor wild in them; they had something celestial, as if they were already surrounded with a bright glory; the sclerotica was of a dirty yellow, and the eyeball sensibly dilated. Towards two o'clock in the afternoon, Huft became more uneasy; he stammered; at three o'clock he told Professor Loebel with firmness and smiling—with tranquillity and confidence: "Very soon I shall have ceased to suffer;" and the same day, before sunset, the sick man expired. The opening of the corpse was not permitted by his wife, notwithstanding urgent solicitations.

These presentiments, as much by persons in health as by the sick, appear to us to owe their existence to extraordinary motions of contraction and expansion in the stratum

of the optic nerves, and in the optic nerve itself, especially before the funnel where the two optic nerves form a ganglion, and to a certain oscillatory motion of polarity that produces a spiritual and intuitive ecstacy, and which creates presentiment in certain individuals; for if we admit that the faculties of the soul have their seat in the brain, and that it is only there that they can attain the highest degree of perfection, and to produce in it a particular intuition, why should we not also admit that the faculty of presentiment and vision exists in the nervous organs of which we have spoken?

We have been led to this idea by the relation of expansion and contraction of the eyelids, and especially by a somewhat similar manner in the magic expression of the eye during the presentiment. Indeed, in the same manner as the eyes in their mimic action display by the effect of the motions of the soul particular looks determined by the oscillations of the brain, in the same manner the eye of a visionary ought to represent a subjective image, because it exists, and we ought also to admit in the stratum of the optic nerves, in the optic nerve and in the ganglion, an oscillation and an extraordinary polarisation. Consequently the representative faculty, and all which determines the spiritual and physical visions and the visions themselves, act upon the eye and change the plastic sight, the looks and their variations, as we shall show in the course of the work itself in a circumstantial and more positive manner.

The following works may be consulted on the subject of presentiment.

Plutarchus, de defectu oraculorum. Tom. 2. op. p. 196.

P. Petitus, de sybillis. Lib. I. cap. 8. p. 30.

A. H. Fasch Diss. de prædictione mortis. Jen. 1686, in 4to.

Baier Diss. de præsagiis animi. Jenæ, 1699.

Miscellanies collected by John Aubry, id est: miscellanea de singularibus dierum et locorum fatis, ostensis, ominibus, somniis, visionibus, vocibus ac pulsibus auditis, vaticiniis, miraculis, oraculis, etc.; collecta A. J. Alberico. Lond. 1721, 8vo. 16 B.

J. J. Sueno Ueber die Ahndungen. Brandenburg, 1759, 8vo. 8 b.

Ch. Fr. Eschenbach Obs. de ægro martis diem præsagiente; in dessen Observat. anat. chirurg. medico rarior. Ed. 7. Alt. Rostock, 1769, 8vo. p. 445—444.

Ruediger Physic. divin. 1 cap. 4 sec. 4to. 43.

Spinoza, in Tractat. Theol. Pol. cap. 2. p. 28.

Ch. Juncker de mortibus ominosis.

Walch's Philos. Lexicon. Fourth edit. T. 1, S. 160.

Tr. Hufcland, Ueber Sympathiè. Weimar, 1811. in 8vo.

We pass in silence the magnetic visions on which Heineke, Kluge, Stieglitz, Eschemuayer and others have written a great deal, as also the visions in dreams of which Hippocrates, Galen, Tr. Hoffmann, Darwin, Lichtenberg, Unzer, Morits, Huber, and others have already taken notice, and we shall apply ourselves in preference to consider the eye under the physiognomic relation, but briefly. If in reflecting upon the scientific works of some great men, we find that several among them have endeavoured to discover the propensity to virtues and vices, as well in the features, as by the structure of the skull, and to fix in this respect rules and systematical precepts, we must acknowledge that we always observed, that these objects have been treated too separately; since the great and immortal Lavater, as well as Doctor Gall, have always attached too much value to the distant parts of their object, without embracing the whole, and without building their edifice upon the basis of criticism and of synthesis.

J. Ch. Lichtenberg* says, with justice, in speaking of Doctor Gall: "We must not treat upon the exterior form of a head, in which a soul resides, as upon a pumpion, nor pretend to calculate the events which depend on this being, as we calculate the eclipses." Let us remark, on the subject of the treatise on Physiognomy of Lavater, that this author occupies himself not only with the plastic expressions which the motions of the soul produce upon the features of the face, but that he enters also into some details upon the description of the eyes. It appears to us, however, that he paid but little attention, and only in passing, to the nature and mimic of the eyes. If he had profited by the observations of Aristotle, Galen, Polemann, Plinius, Aphrosidius, and especially of Porta,† where we find on this subject, from page 371 until 447, a treasure of truths, this great man would not have treated so briefly of the expression of the eyes, and under the consideration only of the history of physiognomy. According to our views, we never will be able hereafter to establish a scientific physiognomy unless we take the eye for a basis, and proceed primitively from this organ, connected at the same time with the expression of the eye, the description of the face and skull, and judge and appreciate these data with a philosophic mind. It is only upon these conditions that thinking men will succeed in founding and establishing a rational physiognomy. Then we shall, without doubt, be convinced that we can recognise in some human eyes those of some animals, as, for example, the cunning eye of the fox in that of a mischievous man—the eye of the sheep in that of a narrow-minded man or a simpleton.

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* Ueber Physiogn. in dessen verm. Schrift. 3 B. S. 508.

† De Human Phys. J. B. Porta. Neap. 1. IV. Ues. 1601.

Several ingenious authors have already mentioned in their classical works the importance of the eye, considering it connected with the expression of the face, and with relation to the motions of the mind and character; such are Galen, Plinius, Cicero, Montaigne, Bacon, Haller, Wolff, Gellert, and even Lavater.

The poets, ancient and modern, have always extolled in their songs the language of the eyes, and have sought to immortalize the eye and its mimic. They seized the beauty of the eye, and the soul with its different motions, such as it is represented in the eye; in their enthusiasm they have sung the passions in the expression of the eye, and they deserved immortal laurels. It is sufficient to name here, Homer, Schiller, Goethe, and Sheridan.

The great plastic artists prove equally by their masterpieces, that they have attached the greatest importance to representing well the eye, in which we observe the whole of their genius. They knew how to put a particular expression, a true life, into the eyes of their subject, and after whole centuries the observer cannot help paying to the authors a just tribute of admiration.

To demonstrate this fact, we must mention a rare and classical work from Reussner,* in which are inimitable engravings on wood of the most learned men, poets, philosophers, and artists of England, Italy, and Germany. There reigns an incredible expression in the eyes and physiognomies of these portraits. But we invite our readers to examine the work in the libraries, and they will convince themselves that these engravings are of a perfection and

* Icones sive imagines vivæ, litteris cl. virorum Italiæ, Græciæ, Germaniæ, Galliæ, Angliæ, Ungariæ, ex typis Wald Kirchianis in lucem productæ: cum elogiis variis, per Nicol. Preussnerum. J. C. et P. C. Basileæ apud Cour. Waldkirch, MDXIC.

beauty little known, and that they answer every thing that can be desired from art.

These excellent engravings on wood have been drawn and engraved by Tobie Stimmer. The editor of the work makes the following eulogy of them : " Similis plane thesaurus inconum plurimorum, non modo bellica virtuti, sed etiam litterarum gloria illustrium virorum, ad vivum expressorum in Museo Joviano ad huc cernitur ; ex quarum archetypo a nobili artifice Tobia Stimmer summa fide depictæ, et magno studio nec minare sumptu in publicum postea prolatæ a Petro Perna, viro optimo et librario diligentissimo," &c. Particularly are to be admired the expression and life that reign in the portrait of Aristotle, the eyes of which attest the genius of that great man.

We remark also in the same work, in respect to the expression of the eyes, the portraits of Claude Ptolomea, of Alexander the mathematician, of Dante, of Petrarch, of Fracastor, Ariosto, Titian, Michael Angelo, and a number of others. May the artists who love to reflect, profit by the ideas which we display here ! May they study the ancient master-pieces of painting with taste and feeling, as objects the most important and the most characteristic to form the basis of expression and physiognomy !

SEMEIOLOGY OF THE EYE.

Dulce lumen, et delectabile est oculis videre solem.—Eccles. ii.

The eye is undoubtedly the noblest work in man, and the finest organ of sense, which being destroyed or disturbed, the beauty of the face is altered, all its expression lost, and the physical life, which is imparted by the soul to the physiognomy, as indicated in its various motions and changes, becomes extinguished and disappears.

It is in the eye that the three elements of organization unite: the *eye* may be regarded as the index of the feelings of the soul; *it is in the eye* that the least emotions of the mind, at their beginning and maturity, are at every instant perceptible. And this important truth will be found confirmed by every attentive observer. Wit, reason, genius, thought, and sudden ideas, and the lightning of the soul, all these intellectual faculties, are they not expressed in the eye?

Demand of the psychologists, men of extensive research and profound thought, if the genius which

comprehends every thing, is not easily recognised by his looks, and if the treasures of their ideas do not display their splendour in this divine organ? Therefore Cicero says, with as much eloquence as truth: "Nihil est difficilius, quam a consuetudine "oculorum mentis aciem abducere." It is incontestable that the expression of genius of great men, even of those in private life, distinguishes itself evidently in the eyes as a gift of heaven. The immortal Plato appears to have already known the radiation of the mind in the eyes: he judges of it in the following manner, after the translation of Ficinas:

"Sed ex omnibus faciei partibus primiluciferi "oculorum orbes coruscant hac causa dati. Ignis "certe illius, qui non urit quidem, sed illuminando "suaviter diem invehit mundo, participes oculorum "orbes dii fecerunt. Intimum si quidem nostri cor- "poris ignem, hujus ignis germanum sincerumque "per oculos emanare voluerunt, in quibus lenis "congestusque ubique ignis hujus modi sit, sed per "eorum duntaxat solidiorem angustamque medie- "tatem ignis purior evolet, crassior vero cohibea- "tur. Itaque, cum divinum lumen applicat se vi- "sus radio, tunc ea duo inter se similia concurren- "tia atque commixta, quo oculorum acies dirigun- "guntur, ibi in unius jam domestici corporis "cohærunt speciem ubicunque videlicit tam intimi "quam externi luminis fit concursus. Totum igi- "tur hoc propter similitudinem passionem eandem "sortitum, cum quid aliud tangit, vel ipsum ab alio

" tangitur, motum hujus modi ad corpus omne, per-
" que id ad animam usque diffundens, sensum effi-
" cit, qui visus vocatur. At postquam in noctem
" discesserit cognatus ignis, visionis radius evanes-
" cit."—*Plato in Timeo*, p. m. 1056.

In the same manner as the innate force of the mind is distinctly to be seen in the eye, so we remark in it also want and poverty of wit. The eye of a man without wit is inanimate. His looks are dull and frequently fixed on vacancy; in one word, he is in want of life and animation, therefore Marcus Palingine says, with so much force and truth:

" Has species mente (capitis namque arce suprema
" Mens habitat solioque sedet regaliter alta)
" Ostendunt oculi; nunc prudens illa sagaxque
" Cognoscit rem, cujus adest formalis imago."

Here is the place to speak of the effect of the affections of the soul, or of the passions upon the organ of sight. The passions arise primitively in the *sensorium commune*, and are reflected thence in the same moment to the eyes, of which they augment or diminish the functions and splendour, according as they exert an action more or less enfeebled upon the whole organization, or upon its parts.

Joy animates and colours the face, enlivens the eyes and renders them bright; the pulse becomes animated; the heat which the arteries communicate to all the parts of the body augments; the secretions become more abundant. Joy displays

itself in the eye by a mild brightness, which spreads itself upon the white of the eye and the cornea; and which, by the widening of the iris, occasioned by the access of the blood, communicates to the eyeball a particular expression, more easy to perceive than to describe. A divine ray shines in the eye animated by joy, and the other parts of the face become more expressive. Joy is easily to be seen in the eye, and any exact observer will also, without much trouble, distinguish in it the inward joy or content of the mind.

Successful love shows itself in the organ of sight in a manner very analogous to joy; it beams with mildness, and animates voluptuously the parts of this organ; the iris appears as if dipped in water, rapture is painted on the eyeball, and a voluptuous languor surrounds the cornea of the eye and the conjunctiva; hence it is commonly said of these eyes, that they are *intoxicated with love* (*ces yeux sont ivres d'amour.*)

We must also mention the language of the eyes of lovers, an object worthy of the attention of the psychologists. Love that shines in their eyes excites the senses, and the sensations which proceed from it pass reciprocally from the eyes of one into those of the other. They appear, therefore, in these moments sometimes full of animation, sometimes filled with mildness. They look forward, or sideways, or fix themselves with ardour upon the beloved object; or as Chrysippus in Plutarch says, (de placitis Philos. cap. 15,) "perfundentur ex oculo

" radii ignei." Another philosopher describes the effects of love in the organization and upon the eye in the following manner:

" Amor vulgaris est fascinatio quædam. Quid " mirum si patefactus oculus et intentus in aliquem " radiorum suorum aculeos in adstantes oculos " jaculatur, atque etiam cum oculeis istis, qui " spirituum vehicula sunt, sanguineum illum vapo- " rem, quem spiritum nuncupamus, intendit? " Hinc virulentus aculeus transverberat oculos: " cumque a corde percutientis mittatur, hominis " perculsi præcordia, quasi regimen propriam re- " petit, cor vulnerat inque ejus duriori dorso he- " bescit, reditque in sanguinem Mars."—*Ficinus commentarius in Platon. Conviv. cap. IV.*

It is in the eye that love celebrates its triumph, and Valloriola, obs. 7, lib. 2, describes admirably the loving sympathy of the eyes in these terms:

" Hic spiritus incensus, et jam amatæ rei specie " agitatus, cor exagitat, inflammat, uretque nimio " motu atque caloris æstu; dum vehementer potiri " re amata amans desiderat, dumque vicissim illa " nitentes in illum oculos convertit, adeoque mutuo " adspectu amantes visorios utrinque manantes " radios complicant et commiscent annon adspectu " amatorio præcordia spirituali telo vigent, et una " cum adspectu mutuo alter alterius amorem com- " bibet?"

Yes, love has put in the divine organ of the eye, the most eloquent and significant expression, which all those who in the golden age of life loved, or

were loved, will remember. Unhappy love is not less faithfully painted in the eye, but to appreciate the expression of this passion in the look, the observer must also carry his attention upon those parts that surround the eyes, and be capable of judging them with these organs.

The forehead of an unfortunate lover is the seat of a particular coldness; the eyebrows bend strongly towards the eye; sadness and the desire of seeing the beloved object renders them heavy: the eyelashes are in repose, and turned downwards, as if they were the interpreters of the sufferings of the soul. Want of hope and regrets are visible in the cornea of the eye and the conjunctiva. The iris of unfortunate lovers is rather contracted than extended, so that the eyebrows appear small rather than round and wide. The motions of the eye are slow and dejected.

Let us now examine the plastic representation of *Chastity*. At first, by surprise, which is commonly joined to it, chastity produces an exaltation of the vital properties in the organs of the body; the blood rushes more towards the breast and the face, and hence proceeds the blush which colours the cheeks. The eye opens itself and becomes larger at first by the effect of surprise, but very soon it concenters itself, it bends towards the ground, and the eyelashes repose with a mild sweetness upon the half opened eye with timidity to avoid any further looks. Innocence and modesty hover lovingly upon the eye, and establish their

residence in the iris, and upon the whole physiognomy they spread an admirable harmony.

Fear shows itself in the eye in different ways: it causes sometimes trouble, illusion, and weakness: sometimes shivering, trembling of the limbs, and palpitations of the heart. One observes, even in the eye, inquietude and instability; it appears larger, it moves briskly from one side to the other; the iris offers a tension joined to a reciprocal and extraordinary oscillation, fixed looks alternating with moveable looks; the eyeball is rather large than contracted; astonishment, mixed with fright and anxiety, is painted in the eyes; the eyebrows are more close than common, and more bent and turned towards the eyelashes, and it is with much reason that Fromman says on this subject: "In "valescente metu sub palpebris turbidi refugium "quærunt."

Affliction and *sadness*, passions which attack sensibly moral and physical nature, are recognised in the eyes by dejected looks. The eye appears troubled, its motions are slow, its looks sad, the cornea covered as it were by a cloud, the sclerotica is of a watery blue, the eyeball is more extended, and the vessels of the iris of a reddish brown colour. If sadness reaches its height, then we see the benevolent crisis of tears. But if sadness passes to *despair*, or to *chimerical hope*, this struggle of the soul manifests itself in the eyes by ferocious and convulsive looks, the iris and its vessels be-

come more red, and the sclerotica bright and radiant.

No affection of the soul is more expressed in the eye than *Anger*. It shows itself in it, we might say, like an infernal demon; electric torrents spout out from the eyes, which resemble a stormy sky, crossed by lightnings, or a hurricane that dashes rocks to pieces, roots out oaks, and spreads fear and terror throughout nature. In these fits of anger the eye sparkles, the humours of the eye extend the cornea, a savage fire surrounds the iris, the eyeball is more straitened, the sclerotica is bright, and its vessels distended with blood. The eye seems in this situation willing to devour, to crush, or to tear in pieces every thing; the other parts of the face have also the impression of this ungovernable passion; the face becomes red, the lips swell up, the muscles of the face shrink up, and enter in convulsions; the head becomes heated and burning.

Goevres describes perfectly well the effects of anger in these terms :

"Anger makes the lips swell, the eyes sparkle, "the face grows red and burning, the lips tremble, "the mouth is inundated by the more abundant "secretion of saliva, the heart beats with violence, "respiration is accelerated, and the milk of the "mother becomes, by the effect of anger, injurious "to the child."

Envy is also a passion which is much seen in the

eye, and a passion that manifests itself unhappily so often, especially in those persons who do not think, that the sun shines for every body. Envy originates in the imagination or the soul, and acquires its ripeness in the character; it attacks primitively the sensibility of man, and its dangerous effects spread themselves in the second place upon the vegetable and irritable systems of the organization. Envy is painted round the eyes, and in the eyes themselves, as well as upon the whole face. The eyebrows and eyelashes being more contracted, lose their liberty and moveableness. The eye is, so to say, retracted within itself, and fixed towards the ground; it cannot support the looks of others; in certain moments it appears to wish to rule every thing, and turns sometimes its looks freely around, and sometimes regards objects with a certain terror. But these symptoms are observed only when the envious person has some hope that flatters his passion: this moment past, then the eye becomes again suspicious, jealous, the eyeball is more closed than extended, and the iris appears of a brownish red in black eyes, and of a light red in blue eyes.

These phenomena attest the augmentation of the activity of the sanguine system in the iris, an activity produced by the fiendish and infernal humour that rules the object. The sclerotica is yellowish, dirty, heavy, and often troubled; thus Palingene says well:

"Improba pestis
"Diffundens sese totos contaminat artus,
"——— præsertimque oculis angit."

This envious eye pursues the contented man on account of his contentment, the happy man for his happiness; therefore its owner casts but clandestine looks upon other men; he is gloomy, and does not look upon objects with the liberty and ease of other men who are happy or given up to joy. The reflection of the character admits of no dissimulation of the sentiments. Envy shows hell in the eye, whilst joy produces the appearance of a serene sky. Ovid, the Roman poet, has perfectly well characterized envy in the following verses:

"Pallor in ore sedet, macies in corpore toto;
"Nusquam recta acies; livent rubigine dentes,
"Pectora felle virent, lingua est suffusa veneno;
"Risus abest, nisi quem visi movere dolores:
"Nec fruitur somno, vigilantibus excita curis;
"Sed videt ingratos, intabescitque videndo
"Successus hominum," &c.

The picture which we have just presented of the eye of the envious, presents these hideous features only when the passion lords it absolutely over reason, and when it becomes the constant, predominant, and habitual disposition of the character; in other cases it shows itself but lightly, and in certain circumstances of life, its expression is not so

remarkable in the organ of the sight; for then, reason preserving its free course, it is possible that this passion may be excited by just and reasonable motives, and govern, accidentally, the man over whom reason has the greatest power. Let us endeavour to establish the fact by an example. If an enlightened man, and friend of his country and the people, discovers a scholastic writer of an exalted mind, who attacks the rights of the people, and even their individual liberty, by deceitful sophisms, or who, on account of their religious or political opinions, wishes to strike them out of the list of nations, if, I say, a man of wit will rise against such a fanatic, and refute his anti-philosophical principles by reasons drawn from natural right, and he sees himself anticipated by another philosopher in defence of the imprescriptible rights of the people, if then he feels rise in his heart some emotions of envy to have been deprived of the opportunity to speak in such a noble cause; beware to confound this virtuous envy with the criminal envy we have described, and which paints itself in so striking a manner in the eyes. It appears that Demosthenes in his oration for Ctesiphontes had that meaning when he says: "Quis "omnium mortalium nescit, vivos omnes invidiâ "aliquâ laborare, alios majore, alios minore?"

The affections of the soul, and the practice of virtuous or criminal actions, are also in a very ostensible manner expressed in the sight. The robber and assassin display in their eyes the habit of

crime. Misanthropy is naturally imprinted in the eyes of a tyrant, and a bad conscience is visibly expressed in this organ. Such an eye casts but gloomy and clandestine looks around, and no dissimulation succeeds in converting the looks of a tyrant into those of benevolence and liberty; for the predominance of the ill over the good reappears involuntarily in the eye, and announces crime and perversity. The expression of the soul in the eyes is perfectly well described by these verses of Palingene:

" Mitto ea, quæ faciunt homines, quæ lingua referre
" Nulla potest; ergo hic sensus pulcherrimus atque
" Optimus est, in quo sedes pene creditur esse
" Præcipuumque animi hospicium; quotiesque videre
" Aut affari aliquem volumus, tum lumina nostra
" Ejus in adversos oculos intendimus, ac si
" Totus homo atque animus totus consideret illis.
" Nempe oculos, animi speculum, quicunque vocarit,
" Verus erit: nam blandus amor lucescit in illis;
" Apparentque odium, veritas, clementia, mœror,
" Lætitia, improbitas, pietas, prudentia, nec non
" Stultitia, ambitio, timor, ira, audacia, culpa."

Every epoch of life offers also in the eyes a particular inclination of the mind or character. It is thus we see in the eye of a child, innocence, ingenuousness, mildness and sweetness of temper. In youth and manhood, liberty of mind, the passion of life and love are expressed in the eye. In manly age, we can read in it, force, seriousness, perseverance, love to one's country, enthu-

siasm and energy; the eyes announce the experience of the instability of human actions. The cornea of the eye is more hard and less bright than in the eye of manhood, the border of the iris, which it connected to the cornea and the skin of the eyelid by a single and very fine tissue, often of a milk-blue colour, and the interior border that forms the apple of the eye, is of a red more or less dark.

Even the outlines of the ages of life, can be observed in an analogous manner in the eyes, as *spring*, *summer*, *autumn*, and *winter* in eternal and infinite nature.

The sympathy and antipathy, or the idiosyncrasy of the eye, in respect to certain colours, ought also to fix our attention. In the same manner that there exist a certain sympathy and idiosyncrasy in the character, we observe also in the eye affection or aversion for certain colours. The ingenious Fracastor says very well on this subject:

" Mira profecto ea concordia est, quæ inter sen-
" sus et eorum objecta versatur, si temperata sint;
" alioqui, si excedant, non solum non consentiant
" cum sensitoriis, sed ea perturbent et corrumpant."

He continues in this sense, and after having spoken of sympathy and antipathy of the sound and tones of the voice, he comes to the eye, of of which he treats in these terms:

" Eadem et circa visum contingunt, et prop-
" ter easdem causas. Lumen enim si ingens sit,
" ab animâ ferri non potest quoniam et ipsam vir-

" tutem et applicationem dissipat, quod et colores
" quoque faciunt, qui nimium lucis habent, ut albi
" et rubri, si et fulgidi sint; medii vero, quod tem-
" peratiores sint, grati omnes recipiuntur, et inter
" ipsos viridis qui temperantissimus est, tum qui
" illi sunt proximi ut puniceus et flavus. Niger
" vero, quod privatio quædam sit lucis, minus de-
" lectat: parvorum quoque conspectus ingratus
" pariter est, quod applicatione multa indiget et in-
" distinctus est."—*De Sensuum sympathia et antipathia*, p. 83—84.

The first cause of sympathy and antipathy in the senses, and especially in the eye, is not very easy to describe, nor the sympathy and antipathy of characters; but experience has nevertheless convinced us, that these phenomena exist in the organization, and that they are very important for the naturalist, physiologist, and physician in diseases.

Martial, in one of his epigrams, (Lib. I. epigr. 2.) says:

" Non amo te, Sabidi, nec possum dicere, quare;
" Hoc tantum possum dicere: non amo te."

It is not only in individuals, that the eyes may be considered as the mirror of the soul and character, but these organs show most generally the spirit and character of *whole nations*. We distinguish in it liberty and slavery, happiness and misfortune, wealth and poverty. Examine with coolness and attention the eyes of unfortunate people, who are

obliged to spend a miserable life in slavery; whose cruel destiny does not allow them to contemplate and to admire the beauties of nature, and to whom spring and summer are without charms. Every morning that the sun embellishes only adds to their misery; days appear to them too long, because life is odious; oppressive burdens, imposts of all kinds, and restriction of liberty, deprive them of all the enjoyments of life, and subject their children to the most urgent wants; vampires in human shape, miserable flatterers of the great and powerful, sport with their legitimate hereditary properties, and annihilate their physical and moral strength, by arbitrary and tyrannical acts. You will find those people's inanimate eyes having the impression of misfortune, grief, trouble, malediction, fury and despair painted on them; their eyebrows are puckered by the thirst of revenge; their looks are mistrusting, gloomy, ferocious and furious. What a different aspect the impression of the soul and character offers in the eyes of the people of *free nations!* Look at the *independent* and *happy nation* of the *United States of America*, where every citizen enjoys equal rights; where there exist neither ranks nor religious privileges: look at the countries where the people are animated by the love of labour, order, and industry; where wealth and love for science and the arts reign, which can attain their last degree of perfection only in *free nations*. Happiness and joy are visible in their eves; their looks are open, agreeable, affable,

grand, and noble; we discover in them force, life, energy, perseverance and candour. Here we do not perceive the gloomy and hidden eye of a Philip II. nor the frightful and ferocious features of a Nero and Caligula. The looks of the inhabitants of North America announce the sweet sentiment of liberty, which Palingene celebrates in the following verses:

"O bona libertas, pretio pretiosior omni!
" O summum primumque decus, quâ prorsus ademtâ
" Nil gratum, nil dulce viris, et vivere mors est!"

After having treated of the *psychological* and *physiological* semeiology of the eye, let us pass to the *pathological* semeiology, in which we shall endeavour to indicate the symptomatic phenomena of interior diseases in respect to that organ, which will enable us to see of what importance is the splendour of the eye, to discover the diagnostic and the prognostic pathology of the eye.

In diseases the eye announces *life* and *death*, therefore the skilful and enlightened physician on entering the room of the sick begins to look at his eyes; he examines them, observes them with the greatest attention, and deduces from them with an admirable precision the diagnostic and the prognostic. We ourself have acquired a certain experience in the art of reading the eyes, but we would endeavour in vain to reduce it to established rules. The philosopher, can he transfer to the

mind of his scholars his ideas, the result of his own conception? Genius conceives it, but cannot teach it. It is the same with the medical presentiment, and with the faculty to employ it as to physic, personal qualities which are not possible to be communicated to students. We teach indeed physic in our colleges, but it is impossible for us to teach *tact* and *genius*; these gifts are innate, and God alone can produce them.

It results from what we have just said, that the pulse, the periphery of the skin, the secretions and excretions cannot be justly appreciated in diseases, without taking at the same time into consideration the different symptoms which the eyes present. It is only in submitting the eyes in diseases to the same examination we use to investigate other parts of the body, that our researches will become important and fruitful.

We shall also endeavour in this work to communicate to practitioners our experience upon this subject, and to draw their attention to an organ which is of so high importance in all diseases.

Expression of the eyes in psychological diseases.

We have already spoken of the importance of the observation of the eye in persons in good health: we have shown that not only perspicacity, reason, genius, judgment, and all the faculties of the soul are traced in the eye, but that we discover in it also the opposite qualities, as simplicity,

mediocrity or want of wit. It is particularly in the disorders of the intellectual faculties where there exists often an idiopathic vice of the brain, or of the nervous system, that the eyes show us clearly what passes in the interior of the person.

I have remarked several times myself, that insane persons after their cure have, for a long time, something savage and timid in their eyes: they had a certain equivocal air, in a word, indicating incontestably that the functions of the mind had been deranged and troubled.

The eye of a person whose mind is deranged, is a true mirror for the physician versed in diagnosis and prognosis. Thus Gmelin says justly in his General Pathology, p. 174—175:

"Among the most constant phenomena we must "count a deranged look, and which is in some "manner the mirror of the soul. The eyes roll "sometimes in a ferocious manner; at other times "they are fixed with sullenness on the same point, "or appear troubled and dejected, or entirely dull "and without expression."

In simpletons the weakness of understanding is very prominent in the eyes, and is to be observed at the very first sight. The eye of the simpleton is without animation and petrified, his looks are dejected and fixed forwards, and only the instinct of nourishment gives them the impression of an animal motion. It is almost needless to add, that at the same time his mouth is gaping, his arms hanging, and his knees bent, and that in general

the vital motions are slow and inert. His eyes indicate an affection of the brain, which proceeds from a dynamical or chymical disproportion, or of a vicious organization of the brain, but always the imbecility of the eye announces that of the mind, whose image is represented in the eye.

In the fool, or in folly (*moria*,) the unorganised succession of ideas is faithfully expressed, and his extravagant intentions are visible in his inconstant looks. If in folly he imagines himself a sovereign, emperor or king, his eye is shining with felicity and satisfaction, and he casts a look of contempt around him. If by chance he imagines himself loved by a princess, one sees shine in his eyes enthusiasm, benevolence, and happiness; an extraordinary brightness is spread upon the albuginea and cornea.

On the other hand, the eye of a melancholy person deserves also your attention; it announces misanthropy, taciturnity, and discouragement; one discovers in it the impossibility of attaining a proposed end, a gloomy meditation, an extreme insensibility for exterior objects, sorrow and misfortune.

If mysticism or religious fanaticism occasions melancholy, we remark commonly extravagance and reverie in the mysterious and extraordinary looks which their subject casts around him. The upper eyelids bend down and repose upon the eye like a person that is tormented by a violent desire.

In fury or madness, which indicates a morbific ferocity of the faculties of the mind, and a force of imagination truly ungovernable, which produces a warm oscillation in the brain, and displays itself by violent actions, the eye casts irregular, fierce, and confused looks, so that the eyes of the maniac resemble the ferocious and sparkling eyes of the man in anger, with this difference, that the phenomena of anger are but temporary, whilst those peculiar to the maniac are more durable, because the disorder of the mind which has become a mental sickness, is permanent and fixed in the looks of the furious. It is especially during a fit that the eyes of the maniac sparkle with most fury.

The gloomy and *squint-eyed* looks of the maniac indicate a new fit of sickness. I have often, in my practice, made the important observation, that in the intervals the maniac spoke with an apparent calmness, and seemed to wish to overpower the explosion of their fury by a feigned mildness, but the eye betraying the confusion of the mind, announced by its strabismus and savage looks the approaching fit of madness.

In these circumstances the eye has always been our most infallible and most certain guide. As the disorders of the mind are seen to display themselves in the eye, the attentive observer may also remark there any feebleness of perception, or remarkable deficiency in the intellectual faculties.

In these circumstances the eye has always been our surest and most infallible guide.

Feebleness of intellect (*amentia*) or the diminution of the superior faculties of the understanding is to be seen in the eye by a look which appears unsteady and without any interest. The eyeball is large and rather round than contracted. In weakness of memory (*amnesia*) the eyes disclose a certain effiminacy, an irresolution and an insensibility, so that we may at the very first moment, with a little practice, find out the sickness. This observation is very often confirmed by people of a very profound knowledge, who, after having studied much in their youth, reach a very great age. These individuals, towards the end of their life, are frequently subject to weakness of memory and reason. The imperfection of our being, and the imprescriptible laws of nature become perceptible, and this unhappy effect is rendered very obvious by the phenomena we were just speaking of. Therefore Seneca remarks with justice:

"Prima languescit senum
"Memoria, longo lassa sublabens situ."
Seneca in Œdipo.

After having rapidly traced the picture of the alterations which the eyes present in physical diseases, we pass to the symptomatic changes in these organs during physical and acute diseases, and we shall make known the important discove-

ries which the great masters of the art have taught us. We shall add, at the same time, with more exactness, and in a more precise manner, the observations we have collected in the field of experience, hoping to offer thus to practising physicians a useful labour, and one from which they may reap some advantage, as far as regards diagnosis and prognosis.

Expression of the eyes in fevers, ague, and phlegmasies.

In the same manner as the phenomena of the pulse and the urine taken separately, do not authorise the physician to give his decided opinion of a disease, and as he ought to take into consideration the other phenomena which occur in the organization of the sick, to draw any results from them, in the same manner he ought not to consider altogether the changes of the eyes, as the only proper signs of diseases; but he ought to take notice of the other phenomena of the organization, compare them with the aspect of the eye, and deduce from them his *diagnosis* and *prognosis*; for circumstances change the state of things, and partial observations lead to false judgments which may jeopardize the life of the sick.

According as one or the other of the systems of the organization is *especially* affected with fever, and as this affection attacks at the same time

symptomatically the whole body, this pre-eminence of the system will be more or less visible in the eyes; for the three systems of the organization, *sensibility*, *irritability*, and *vegetation* are represented in this noble organ.

These systems perform an important part in diseases at that point where the *symptomatic* may become an *idiopathic* affection.

Expression of the eye during synocha.

We are going to trace at first a faithful image of the phenomena which the eye exhibits to us in synocha, in order to be able to seize and distinguish the differences which the eye presents in other sorts of fevers. The inflammatory fever, properly called synocha, in which the action of the irritable system is augmented, and where there is tendency towards the coagulation of the blood, (which announces generally an exaltation of the vital forces,) is obvious from a splendour and particular lustre of the eyes. During the increase of the fever they are red; the sclerotica is rather reddish than humid. In this sort of fever we have found the eyeball rather straitened than dilated, and the vessels of the border of the iris that form the eyeball, were, especially in the most dangerous moments of this inflammatory fever, more swelled, and of a more brownish red than in other inflammatory fevers.

In treating above of the phenomena of the eye in disorders of the mind, we have not thought proper to make an enumeration of the other morbific phenomena of the organization; but we think, that in offering the expression of the eyes in fevers, it is important to indicate the other phenomena peculiar to each sort of fever, in order to be able to seize and distinguish better the essential differences of each individual fever. The inflammatory fever appears commonly during the north winds, or east winds in winter, when the air is dry and cold, and it attacks in preference strong, robust, and plethoric men. It announces itself at first by a violent shivering, followed by a continued heat: the pulse is full, strong, augmented and hard, and resembles when one touches it, a cord stretched and in vibration.

The face is much coloured, and often so red, that there are every where effusions of blood under the skin; if we touch the skin it is not warmer than common; it appears rather, on the contrary, of a mild temperature. The eyelids are painful; we have often found them stretched, and very warm on touching them. The patient is deprived of the sense of smell; his tongue is hot, red, or covered with some whitish *strixa* of clay. Besides, there is connected with it an oppressive and burning headache, sometimes a delirium, the mouth and the lips are dry and warm, and thirst in these fevers is very strong and almost unquenchable. Sleep is interrupted or fails entirely. The stools are hard, rare,

and of a brown or red colour: the urine passes with pain, and often causes to the sick at its passage a feeling of burning in the urethra; it is of a dark red, inflamed, or of a brick colour, and at the beginning of the fever it is clear, and has a deposit. Without being constrained, respiration is frequent and great, the exhaled air is warm, and has a smell similar to the breath of persons who are fasting. The blood drawn from a vein is covered with a thick skin with little serosity. The transpiration is suppressed, and the periphery of the skin is dry and without exhalations. The feverish heat augments progressively, especially towards evening and during the night; it diminishes after midnight and towards morning. We remark at the same time in impatient sick persons, and especially children, a disorder in the nervous system, with subsultus tendinum, convulsive motions and oscillations in the nerves; when these symptoms complicate the fever, the eye appears ferocious and sparkling, darting lightning around it: if we approach the patient with a lighted candle, the eyes cannot bear the splendour of the light. They are extremely sensible and disturbed. In this primitive fever, impatience and anger predominate in the eye.

The observer will undoubtedly find in nature at the bed of the sick, the phenomena we have traced in this sketch. But if there occurs a salutary crisis, the eyes become more calm, the looks cease to be inflamed and troubled, the redness of the

sclerotica changes gradually into a fine white mildness and effeminacy reappear in the eye, so that the skilful physician sees at his very entry into the room of the patient, according to the state of the eyes of the latter, that the sickness has changed, and that he is better. This calm in the eyes is commonly accompanied with a diminution of the greatest part of other tempestuous phenomena of the fever, and the physician ought, at the same time, to take due notice of it.

But if the crisis of the synochus is imperfect, or incomplete, the eye preserves always something bright, and if we compare the critical secretions with the violence of the inflammatory fever which exists, with the pulse, heat, thirst, and the other phenomena of the sickness, we are soon convinced of the imperfection of the crisis, and we ought, according to these diagnostic signs, to regulate the antiphlogistic treatment.

In a similar catastrophe of the fever, the eyes of the patient will deceive you; we always have found in it the truth of the axiom: "Nullum paucum criticum." If the synochus augments and the patient becomes delirious, a change we have had occasion to observe several times in our practice, the eyes present a more ferocious and sparkling appearance than in a common idiopathic inflammation of the brain. But if the inflammatory synochus passes into putrid synocha, the stomach becomes deranged, and then the eye appears sparkling, but not with so dark a red as in the first case;

on the contrary, the sclerotica is a little yellow, sometimes even of a dirty yellow, and the eye appears fatigued and aqueous. The description of the eye enables us to decide with accuracy on the abatement of the fever, or inflammatory symptoms. If the synocha passes to suppuration, the face becomes of a darkish red, the eyes sparkle, the pulse is full and soft, the red colour of the urine very soon disappears, the skin becomes moist and is covered with a clammy sweat, while the patient is at the same time affected with shiverings.

The patient complains often of a coldness which descends along his back; the head is inclined on the chest and the face turns pale: the eyes are hollow, and appear to be deeply concealed in the orbits; they resemble exactly those of a person attacked with an inveterate gonorrhœa: they are more aqueous and brilliant than common; blueish circles form under the eyes, coughing takes place, and sudden flushes often appear on the cheeks. These phenomena show us the beginning of the formation of matter in the lungs. The tongue is at the same time white, slimy, and humid; the lips are also humid, and of a pale red. The pulse is undulating and frequent, or slow and inconstant; the urine is of a light yellow or dark red, and presents a thick and slimy sediment.

If the synocha passes from the synochus to typhus, and if the inflammation of the system attacks with violence the organic structures, it does not terminate by resolution, or by other critical motions,

but by induration; the eyes present precisely the same appearance as when inward scirrhosities exist; the patient appears to be suffering, and presents the same expression as those persons who are labouring under mental anxiety from pain or sorrow. The complexion is of a *dirty* aspect; the face exhibits marks of pain. We see further around the angles of the mouth a particular feature, which appears to reveal a badly concealed pain, like some person who has a secret trouble, which he wishes to disguise under an air of contentment. In these persons we have always remarked the same feature around the angles of the mouth.

Finally, if the synochus terminates in typhus fever immediately, or passing at first to the synocha, and it attacks the sphere of the sensible system, then gangrene often takes place.

This gangrene shows itself at first by a total change of the humour and character of the patient: the skin is commonly covered with a clammy sweat, the voice becomes trembling, the face appears extremely gay or extraordinarily serious. The pulse is, at first, very regular, but always more frequent, without ever being full; afterwards it becomes slow and scarcely perceptible.

The patient has great pain, uneasiness, and wishes every moment to change his place; the urine is of a dark brown or yellow, with a milk blue border; it is thick and exhales a bad smell. It is in these moments that the eye offers a particular and celestial splendour, as if it would announce

the approaching end of man. The iris and the sclerotica have something particularly significant, which, without doubt, any skilful physician will have remarked in the diagnosis, as well as we, if he has paid but a slight attention to the eyes of a patient attacked with gangrene.

It is indeed impossible to trace here with exactness the description of the phenomena in the eye; those who have seen it by experience will agree with us in sentiment. The celebrated Assalini draws also our attention, in a very instructive manner, to the important and extraordinary refractions of the luminous rays of the eyes of persons attacked with gangrene. This shining eye preserves its brightness until the extinction of life itself.

It is almost useless to remark, that at the same time the extremities are cold, and announce approaching death. However important the plastic semeiology of the eye in the synochus may be, it is not less so in the synocha. This last fever, which, according to the experience of our celebrated practitioners, Marcus and P. Franck, has its primitive seat in the vegetable organization, and as we have exactly found it in clinical practice (for the skin, the intestinal canal, and the organs of vision, play the principal part,) this fever, we say, impresses its changes and its specific gradations on the eye equally as in the former case. It is to this that the practitioner ought to direct a particular attention, and join to it the other pathognomonic symptoms, for he who does not know how to ap-

preciate well the changes of the eye in the synochus, will never be able to judge of its very frequent complications with gastric disorder, and the affections of the liver connected with it.

If the synochus does not arise secondarily from the synocha, but begins primitively, it declares itself commonly in summer, especially during west winds or warm rains; sometimes also, but very rarely, it shows itself in winter during the rainy weather.

Expression of the eye in the synochus and its species.

In order to comprehend better what we are going to explain, we shall observe, that we understand here by the word *synochus*, that kind of fever which the practitioners designate under the different names of synochus putris, febris remittens, biliosa inflammatoria, febris biliosa putrida, febris cum colluvie pituitæ in primis viis, febris asthenica, febris verminosa, febris pituitosa, fièvres gastriques, bilieuses et putrides.

This fever takes its character from the causes which produce it. It resides, however, in the venous system, let it proceed from what cause it may. It presents, in the first instance, violent inflammatory symptoms; but according as the principle of life is attacked in the organization, the inflammatory period exists several days, especially during

the time when the fever inclines towards the nervous, or towards the inflammatory fever. If, on the contrary, it inclines towards the putrid fever, the inflammatory period lasts but one day, or is generally but of a very short duration, for then the sickness appears, by the progressive display of the chemical action, to suppress and subdue promptly the vital strength in the organization, in one word, then the chemical dissolution prevails over the preservation of life.

If, in the synochus, the pulse is hard, full, and soft, it is wavering and feeble in the synocha, and is very compressible under the finger, especially if the fever manifests itself without a gastric disorder, which happens very seldom. It is true, that the eye appears in this kind of synochus a little inflamed, but not with a sparkling red: it does not remain constantly so, for in the moments of relaxation, it is rather more dull and aqueous than inflamed, and at this period the eye in this fever continues changeable, and distinguishes itself from the expression of the eye in the synocha.

Let us remark besides, that the synocha appears with the rapidity of lightning without any previous complaint, whilst, on the contrary, the synochus is always preceded by certain pains. The patient feels weak, his appetite diminishes, his eye, before the eruption of the fever is abated, is sad, and his looks gloomy; the bad humour of the patient is painted in the eye; it is surrounded with a small blueish circle. One cannot help observing in the

patient a kind of weakness, a certain sign of the synochus, and which will always accompany this sickness.

When the sickness inclines more to the synocha, the aspect of the eye, in the first period, is rather glazed than inflamed, and afterwards sparkling; the skin is very dry, or excessively moist, and the pulse has not the undulation or characteristic softness, but is quick and frequent. The urine is turbid, yet oftener of a yellowish white.

When the synochus manifests itself, the shivering is less obvious, less permanent, and at that period also the eye is less dry and shining, than in the synocha, but it is more aqueous, as if the patient had exposed his eyes to a sudden current of cold air. These symptoms are commonly accompanied with a blueish circle round the eyes, or with a little visible swelling of the lachrymal bag, similar to that which we observe so often in persons attacked with dropsy of the chest.

As the simple synocha is a continued, and the simple synochus a remittent fever, the expression of the eye offers different aspects in the abatement and exacerbation of the latter. During the abatement of the fever the eye is more dull and aqueous. We remark here and there greasy spots in the sclerotica; the iris is a little pressed, whilst during the exacerbation the eye is more sprightly and the iris more raised.

If gastric disorder has preceded the synochus, the sclerotica appears from the very begin-

ning of a dirty yellow; but in the contrary case, it remains white, and contracts this dirty yellow colour in the course of the sickness, when the gastric disorder supervenes on the synochus.—Moreover, the appetite disappears totally. The tongue is covered with a yellow or white fur or coat, the mouth is clammy, and the patients complain of an acid, bitter, sweet, or putrid taste. They experience a kind of plenitude in the pit of the stomach, qualms, a desire to vomit, and even vomitings; their complexion is yellowish, or in fat persons of a dark red; the heat is burning, and is especially felt in a very disagreeable manner in the hollow of the hands during the exacerbation.

At the beginning of the synochus, the urine is very red, afterwards it becomes turbid, clammy, and on being placed in a glass we may observe it disengage small white globules; the stools are discoloured and sometimes of a light brown.

All kinds of gastric fevers, the inflammatory bilious, the putrid bilious, as well as the pituitous fevers, are painted in the eye in a manner difficult to be mistaken, and pronounce themselves especially in the sclerotica. The character of the fever may be determined as much by the constitution of the patient, as by the morbific influences which occasion these kinds of fevers.

He who desires to have a particular knowledge of the gradations of these fevers, and particularly of the hot fever, must consult the excellent works

of Stoll, of Quarin, of Peter Frank, and of Richter.

The hot fever is a continued remittent fever, which manifests itself generally in spring, in young and robust persons, and which distinguishes itself by a burning heat, by an unquenchable thirst, by dryness of the skin, by the difficulty of respiration, by urine of a dark red, by an undulating pulse, which becomes hard at the moment of the exacerbation, and by gastric symptoms.

The saburral fever may, at least in the first period, appear with an inflammatory complication. Whether this fever proceeds directly from an excess in undigested aliments, or results from the produce of the morbific secretions from the stomach, from the intestinal canal, or from the liver: when slimy matter or bile gathers in the first instance, we perceive constantly the change of the eyes, independently of other morbific phenomena. These phenomena are: want of appetite, disgust for aliments, especially for meat, vomitings of all kinds, oppression in the stomach and in the breast, headaches particularly at the forehead in the beginning, and at the occiput during the course of the sickness, passing heats, giddiness, swelling in the pit of the stomach and belly; moreover, feelings of repletion in the stomach, a symptom which commonly occurs, dull pains in the hips and legs, borborygmi, flatulency, the urine turbid and clayey, the sclerotica of a dirty yellow, the iris weak, and the eyeball a little enlarged.

In the first two or three days, especially when this fever announces itself by inflammatory symptoms, the dirty yellow and greasy appearance of the sclerotica does not show itself, the eye is rather dull and aqueous, and the meibomiæ glandulæ are frequently reddish and inflamed. It is only towards the eighth or twelfth day, according to the course of the fever, that this dirty yellow or greasy colour appears.

If there comes an unexpected salutary crisis, and the gastric disorder decide itself either by stools resembling pap, by wholesome sweats, or by diarrhœa which is not too weakening, this dirty yellow of the eye, which grows daily lighter, disappears, and the other bad symptoms at the same time with the yellow of the eye, and constitute the epoch of convalescence.

But if the crisis is imperfect, if the sweats become clammy, fetid, and weakening; if frequent diarrhœa takes place, if the urine takes a disagreeable colour, similar to chocolate or brown beer, with a bad smell, if the eyelids or the lips and the nose become bluish, if the greasy yellow of the eye augments, if the look of the patient becomes stupid, the nails blue, if the tongue remains yellow or brownish or is covered with a thick, clammy, and blackish mucus, if sadness takes possession of the soul, if we perceive convulsive motions, and the pulse becomes small, frequent, and variable, all these symptoms are dangerous, and indicate a fatal termination. Should one eye appear smaller than

the other, and the patient appear to look at an object more attentively with one eye than the other, this sign, according to the observations of Stoll and our own, announces, in a positive manner, approaching death.

In all gastric fevers we may consider as a fatal sign the sudden change of the urine, that is to say, if it is sometimes troubled, sometimes of lemon colour, then clear and pure like gold, afterwards of a dark brown, finally of a dark red, and if we see swim on it greasy spots.

The eye plays a very important semeiologic part in bilious fever. But here again, we are obliged to make a short explanation of other signs, in order to seize better the symptoms of the eye, and not to confound the burning hot or gastric fever with the bilious fever. In this fever the vegetative system of the organization is affected, during and even before its appearance, and the fever always presents itself under the type of a continued remittent.

In the same proportion as the mind of the patient is sorrowful and depressed, we may observe it in his eyes. The face, during the very short period of the inflammatory state, presents a dirty complexion and dark red, the redness of the eye is not so sprightly as in the synocha. The face is sometimes cachectic and pale, the eyes are yellowish, but rather of a saffron colour, and not of a greasy yellow as in the saburral fevers.

In inflammatory fevers, the eye has some-

thing brilliant, but after some days, in bilious fevers, becomes weak and heavy; it assumes an air of infatuation and vexation. The patients complain at the same time of a feeling similar to that which they would experience if they had all their limbs broken; this feeling exists especially in the back, loins, and the hams. The head is warm, dull, heavy, and sometimes painful; the pulse, in the short inflammatory period, is full and undulating, but never hard nor strong. This inflammatory period being past, the pulse becomes undulant, soft, and frequent; some days or some hours before the critical symptoms, it becomes sometimes again undulating and full, and at that epoch becomes at the same time more quick and more frequent.

The face and the head are covered with a profuse clammy sweat, of a bad smell. These patients are often subject to a more abundant secretion of spittle, the taste of which is bitter, or of a disgusting sweetness. This spittle has a whitish, frothy, soapy appearance; the tongue is yellow, and of a colour similar to that of the bile. The patients feel in the stomach a disagreeable sensation of oppression, as if they had worms.

This state is accompanied with qualms and bitter, burning, and biting vomitings; qualms sometimes occasion vomitings in which different substances are evacuated; there is inquietude and oppression in the hollow of the stomach, but what characterizes principally the bilious fever, is the

desire of refreshing and acid drinks, and fresh air. During the inflammatory period, the stools are more brown than yellow; they, however, grow yellow afterwards, and become more frequent and liquid, and are apt to produce an itching in the anus. The urine during the same epoch is of a yellowish red, but changes afterwards and takes a saffron colour; it becomes greasy, frothy, and colours the linen yellow.

In the course of the bilious fever the periphery of the skin is sometimes changed, and a reddish eruption appears upon it.

When the bilious fever is complicated with other forms of disease, for example, the bilious putrid fever, there is a more considerable and prompt tendency towards the chemical decompositions and dissolution of the humours, and then, from the very beginning, the eye offers a weak, troubled, sinister, and sad aspect, the sclerotica is deeper, greasy, and of a dirty yellow; the eyeball open, and the iris more dilated.

The bilious fever becomes dangerous and mortal, if instead of a decided crisis it is accompanied by inflammation, suppuration, or obstruction of the liver, accompanied by chronic diarrhœa and jaundice; in this last affection, the eye is of a deeper yellow, blackish, and one observes in the sclerotica veins that appear torn.

If there appears, at the same time, a feeling of heat in the intestinal canal, with a steady pain in the region of the liver; if the urine is discharged

in small quantity, if it is brown or of a deep red, greasy and constant in its colour, having a blueish circle with a greasy pellicle on its surface; if the thirst augments; if red chaps appear on the tongue, and the mouth becomes blackish and dry; if, moreover, the patients feel a strong nervous sensibility, with a profound sadness, and if there are, at the same time, grinding of the teeth, trismus, subsultus tendinum and masticatory motions in the inferior lips, accompanied by ferocious and stupid looks, we may renounce all hope of convalescence.

We regard as favourable symptoms the critical motions which indicate an abatement of the morbid phenomena, especially the successive decrease of the yellow colour of the eye, which then begins to become clear; we see these sorrowful and weak looks change into open looks, provided that there existed not any organic defect in these individuals before the fevers, that they enjoyed the strength of adolescence or of manhood, and that the vegetable sphere be not weakened.—See the ulterior details upon the prognosis in the works of Peter Frank, Conradi, Richter, Heker, Marcus and Reil.

In the bilious fever the bile predominates everywhere; the eye, urine, skin, and the intestinal canal furnish us the most convincing proofs of it. In the pituitous fever, on the contrary, phlegm reigns in all the organization. This fever forms itself more slowly than the bilious fever.

The patient complains of an insipid taste in the

mouth and throat, which are covered with a kind of clayey mucus; afterwards the teeth are covered with it to such an extent that the crown is scarcely visible. The patients have no relish for their ordinary food; the tongue is covered with a thick and whitish mucus; they are tormented with flatuosities; the eye appears in the beginning a little weak, and shows itself a little shining and aqueous during the exacerbations. However, afterwards the secretion of the eyes changes into mucus, and we remark then several slimy *striæ* upon the cornea and the conjunctiva. The eyeball offers a characteristic sign in this sickness. I myself have always found it dilated and round, the iris surrounding like a thin veil, and it was absolutely slackened.

In the course of the fever it was even insensible to slight frictions, and it presented the appearance of the gutta serena; the look becomes frequently silly, or, to express myself better, like that of an idiot. The pulse is slow and short: it becomes a little firm during the exacerbation: the stomach produces frequently thick matter. The patient is sad and dejected; he has no appetite, without having, however, a bad stomach; he has an inclination without being able to sleep, and falls finally into a kind of drowsiness. The stomach, and the whole intestinal canal are covered with clayey mucus; the body is curved, and the abdomen painful.

The urine is, at the beginning, of a pale yellow; afterward it becomes a little deranged, and re-

sembles the essence of tokay—one discovers in it a whitish and clammy deposit; swelling in the mouth and miliary eruption join it: the patients lose their will—they speak heavily, stammer, and cannot be understood. In several persons I have observed a very dangerous cough, without expectoration, accompanied by a symptomatic and asthmatic pain in the chest; at last sensibility is suppressed in the vegetation of the organization by the very abundant secretion of slimy matter.

The characteristic symptom of this fever is, that it is often of long continuance, and that it terminates frequently in not less than six weeks; that it rages during moist weather, and particularly in damp and rainy autumns. The febrile symptoms diminish towards morning, but augment considerably towards evening, and the frequent sweats that occur procure no relief to the patient. Headache appears only in the first eight or ten days; afterwards the head is rather oppressed than painful. If the disease changes into putrid fever, we remark also in it, at the same time, all its characteristic symptoms. Stoll, Selle, G. A. Richter, Conradi, Raimann, give on this subject ample details.

If this pituitous fever terminates happily, every thing must show itself extremely changed, the weakness of the eye disappears, the eyeball is closer, the iris assumes its natural tension, the looks are more lively, and show some interest for present objects; the eyeballs cease to be covered with mucus, and the latter disappears totally from

the eye; finally, the nervous and putrid complications cease at the same time these symptoms appear. Should these changes not take place, and should the fever attack persons subject to diseases of the mucous membranes, or persons debilitated or in a convalescent state, it terminates only in death, and all the means of art are fruitless.

However, the rational physician ought not to neglect to observe the other phenomena of the organization, and compare them with the expression of the eye; for as the eye grows gradually clearer, the pulse, the tongue, the cutaneous transpiration, the urine, and the digestive functions, must change at the same time, and announce a prompt cure.

In the same proportion the intellectual faculties must confirm the signs of convalescence, the patient must cease to speak nonsense, the temporary drowsiness vanishes, the calm of the mind manifests itself by a new interest for life; when these phenomena are present, the cure is not remote.

The worm fever (febris verminosa) a variety of the pituitous fever, is in the first instance produced by the presence of worms. It is commonly complicated, for it changes suddenly into a pituitous fever, which we may say is but a secondary affection, being primitively produced by worms, which continue during the sickness.

This worm fever may proceed from the *ascarides*, *lumbricoides*, *lumbrici*, from the *trichocephalus*, or finally, from *ascarides* and *solitary worms*. But we can properly admit the existence of the worm fever

only when the patients discharge these worms a little while before the sickness, or at the beginning; for the physicians often confound the primitive pituitous fever with the worm fever, and the existence of worms when there are none, and when we must not even suppose any; for admitting falsely the presence of worms, the treatment may put the life of the patient in danger. Besides the constant symptoms of the pituitous fever, the worm fever is distinguished by the following marks, which, after our numerous observations, are especially isochronously visible in the eyes, and which very seldom will mislead you. Children are particularly subject to the worm fever: their eyes are at first brilliant, the sclerotica is of a blueish white, the eyeball is a little dilated, and grows larger and becomes more round during the course of the sickness; afterwards the sight doubles, blue circles form round the eyes, a swelling of the nose and the upper lips, and besides strong pains are felt in the belly; they are accompanied by spasms and convulsions, in the same manner as is seen in the nervous pituitous fever.

The fever is often very high, the patients have an insupportable itching in the nose, the complexion changes several times during the day; the belly is a little swelled, and qualms take place in the morning; the secretion of the spittle is also augmented. The urine is pale, troubled like whey, and during the course of the sickness it becomes often brown like beer, which is a mortal sign. Colics, dizziness, a variable pulse, grinding of the

teeth, palpitations of the heart, convulsions, useless efforts to go to stool, are characteristic symptoms of the worm fever.

The treatment of this disease consists in destroying or evacuating the worms by suitable remedies. When we have succeeded, the eye and the urine very soon change; the eyeball becomes more moveable, and is not so much dilated, but more straitened. The sclerotica regains its white colour, and loses its uncommon brightness; the urine becomes clear, and ceases to look like whey. Gradually as these symptoms appear, all the other symptoms change also for the better.

It is only by these changes, that the health is by degrees re-established. But, on the contrary, the eyeball remains big, and becomes more insensible; the urine loses its red and brownish colour, and takes a sweetish and qualmy odour; the belly swells considerably, and all the signs indicate that the patient is worse; then the worm fever changes into hectic fever, or into a slow nervous fever, and death terminates the life of the child by an attack of convulsions.

We are now going to trace the expression of the eye in the *putrid fever;* but permit us to present, in the first place, an important observation of the diagnosis and prognosis.

Before the disease is fully formed, and before it has reached the zenith of its malignancy, the head and the digestive functions are affected; the ap-

petite is wanting, sleep is uneasy, the patients complain of fatigue, heaviness in the limbs, they are in bad humour and melancholy, the eyes are weak, the eyeball a little dilated, the sclerotica a little dirty, not looking yellow at the beginning; the skin is humid and glutinous; the patients perspire during the night without feeling better in the morning. They perceive in their mouth a bitter and then an insipid taste.

The urine is oily, thick, of a dark red, turning almost to brown, the stools are of an insupportable odour.

Putrid fever never begins with a violent shivering, it is rather moderate, and the heat that accompanies it is not extreme, and remains about the same temperature, and communicates a burning sensation to the touch; the symptoms steadily augment, and very soon reach the highest degree.— This fever offers then rather the nature of a long continued fever, though its primitive character be remittent; the burning heat becomes still stronger, and the strength of the patient diminishes quickly: discouragement, great indifference, and a real stupidity seize him.

There exists, at this epoch, a particular disgust for all kinds of nourishment; the headaches are insignificant, the head is rather benumbed. During the night we observe a slight delirium; the eyes are tumefied, the look of the patient is melancholy, the eyes are troubled, and often so weak, that at the very first look we may recognise in them the

putrid fever: moreover, the iris is very much relaxed, and the eyeball rather large than small; the sclerotica presents an aqueous and dirty white aspect.

Whilst the sickness is progressing, we observe a morbific secretion of the glandulæ meibomiæ so augmented, that the eyelids adhere together during the night. The mucus has often a cadaverous odour and a qualmy taste; at the same time the patient casts lazy and stupid looks around him, the hearing is difficult, the tongue dry, chapped, black, often covered with mucus and swelled; afterwards the lips, teeth, and the interior part of the mouth become covered with a greasy matter, which at a certain distance resembles soap; this secretion abounds especially about the nostrils. The pulse is weak, sometimes extremely quick, variable, and at other times very slow, whilst all the other symptoms gradually become more alarming: the voice is weak and trembling; the secretions and excretions of the organization have a fetid odour, and a smell of putrefaction; then diarrhœa and hemorrhage of a cadaverous odour take place.

The skin offers a remarkable change—it has a bad aspect, is frequently dry, and one sees on it exanthems of all kinds; the petechiæ appear sometimes marbled, covered with a white miliary eruption similar to small pearls, which become by degrees yellow and then blackish, according as the decomposition of the humours progresses in the vegetative sphere of the organization.

Aphthæ, of different colours, form in the mouth, very similar to poisonous mushrooms, and which extend themselves to the throat; at last the sensibility is so powerfully excited in the reproductive sphere of the organization, that a secondary typhus appears. It is then that the putrid fever has reached its highest degree, and to the phenomena which we have just mentioned, are superadded nervous symptoms, such as trembling of the limbs, convulsions, subsultus tendinum, a violent and long delirium, meteorismus, swoons, evacuations, the greatest powers of the system joined to the greatest degeneration of the humours; finally, general paralysis and death terminate this frightful fever.

No kind of synochus terminates promptly by critical evolutions. It is the same with the putrid fever; it terminates frequently in inflammation and suppuration of the liver, often in visceral obstructions, sometimes in chronic diarrhœa, jaundice, or dropsy.

Even then, when the important period of the crisis approaches insensibly, the eye indicates with exactness and fidelity the favourable or unfavourable changes of this fever, in which it always becomes us to pay particular attention to the urine, eye, and sweat. When the eye becomes brighter, when it has lost its melancholy aspect, when the looks become less sad, when the troubled and blackish colour of the sclerotica, the eyeball, and nostrils disappears, when the urine has a sediment, when it does not contain blood in dissolution, when

it only becomes deranged late, when it runs easily and in abundance, and has a yellow, brown, or reddish deposit, and when a free perspiration, with augmentation of strength takes place, when parotis and furuncles form, when a difficulty of hearing or deafness occurs, when an eruption appears round the mouth and nose, these happy symptoms are generally followed by a prompt recovery.

But if the eye continues to become more and more melancholy and weak, and the eyeball dilated considerably, if the sweats become excessive, if the prostration of the powers of the system is constantly augmenting, if the cadaverous odour of the patient becomes stronger, the pulse diminished and varied, if the urine resemble brown beer, or if it is mixed with blood or with thick matter, if the delirium becomes more frequent, if severe darting pains occur, these symptoms indicate the approaching formation of gangrene, in which the chemical decomposition overcomes the dynamic life in the organization, and announces that the patient will soon fall a victim to the disease.

The putrid fever which takes place in winter or spring, is of a milder character than that which occurs during the heats of summer, particularly during a stormy season, accompanied with warm rains, especially if this disease attacks feeble persons of a soft and *spongy* constitution; such cases are generally hopeless, and commonly terminate fatally on the seventh, fourteenth, or twenty-first day.

Finally, the putrid fever is positively mortal, if there occurs a paralysis of the sphincter of the anus, of the bladder, of the muscles, of the pharynx, of the extremities, or the lungs, the brain, or congestion of the organs of the senses; a gangrene of the interior parts, which makes rapid progress and spreads an insupportable fetid odour, is mortal in a few days. From the beginning of these phenomena, the eye is always changed in an uncommon manner; the patient has a stupid look, sometimes a squint; occasionally the eyeball is dilated, and announces infallibly a speedy dissolution. In the intermittent fevers which form a particular order, and which are distinguished from the continent as well as from the continued and remittent fevers, there are intervals of perfect freedom from febrile action, which we call apyrexia.

These fevers have their origin particularly in the vegetative element of the organization, and according to the individuals, the exterior coincident influences, and the reigning constitutions, they approach the synochus, synocha, or the typhus fever.

They attack particularly the sympathetic system, and may consequently bear the inflammatory, putrid, or nervous character, so that these complications may produce intermittent, gastric, bilious, atrabilious, and pituitous fevers. Fearing, however, to wander too much from our principal object in tracing the characters of this fever, we refer our readers to the following classical authors, viz.: Senac, Heinrich, Collin, Sauvages, Torti, M.

Stoll, Vanhoven, J. P. Franck, S. G. Vogel, A. G. Richter, Quarin, Sebastian, Raimann.

We shall confine our observations particularly to the changes which the eye presents in the different stages of this fever.

During the cold fit, the eye is rather clear than troubled; the sclerotica has a bright colour, and the eyeball is rather more contracted than dilated: fear and anxiety manifest themselves in the looks; the face is pale, the skin contracted, the extremities, the nose, and the ends of the fingers are cold; the hands and nails turn blue; a cold fit commonly occurs, during which the limbs tremble and the teeth chatter; the stomach is swelled. These symptoms are followed by nausea, vomitings, qualms, and flatuosities; the mouth becomes dry and clammy, the urine is limpid, the thirst violent, the pulse concentrated, quick or slow, short, firm, unequal, or altogether suppressed; the shiverings are sometimes so violent, that they degenerate into convulsions, which I have seen three times in my practice.

In the second period of the intermittent fever or the hot stage, where the patients suffer the most, we frequently witness vomitings, pains in the back, with headaches and unquenchable thirst.—All the periphery of the skin is dry, the pulse becomes quicker but more regular, respiration humid and difficult; the eye is then brilliant, the sclerotica is red, the eyeball somewhat contracted, and we remark in it oscillations; the looks are

more sprightly; the urine is frequently redder, often dark in colour, at other times clayey, especially if the gastric state predominates. At the same time the eye is troubled, a little weak and dirty, and presents but little vivacity.

In the third or sweating stage, the extreme thirst and dryness of the skin disappear. At this epoch the eye is more weak, the eyeball appears larger, the iris does not seem so bent and is rather loose, the sclerotica appears aqueous, the reddish white has disappeared; sometimes the eye is in tears, which happens especially when the attacks of the second period have been too violent and too long.

The tongue is moist, generally a profuse perspiration ensues; the pulse becomes soft, frequently slow; the patient often begins to perspire, and the sweat is clayey and has an acid odour; the urine deposits a reddish and slimy sediment; black or pitchy stools sometimes occur, and occasionally diarrhœa.

We witness sometimes an eruption of small pimples round the lips, especially during a quartan fever. These symptoms are followed by great weakness, by a rending of the limbs, and even, but rarely, by a transitory comatose state.

The febrile paroxysm having passed through its three stages, is succeeded by a state of apyrexia; in this interval, where health is only apparent, the eye has always served as a guide in the diagnosis

of intermittent fevers, and the phenomena which it presents, have rarely deceived us.

The eye offers at this epoch absolutely the same aspect as in the first inflammatory period of gonorrhœa; it is of an aqueous brilliancy, the sclerotica is more blueish, and in certain circumstances dirty and troubled, especially when the digestive organs are suddenly attacked. Sometimes we remark in apyrexia that the tongue is covered with a white or yellowish mucus, the patient experiences a sweetish or bitter taste, and has a decided aversion for meat, and all other dishes in which meat is contained.

The patients are very sensitive and irritable; their complexion is cachectic and bad; the urine is disturbed, clayey, of a dark red or saffron colour when complicated with biliary derangement.

The complications of this fever manifest themselves in a very positive manner in the eye at the same time with the other phenomena. The gastric intermittent is visible in the eye by the yellowish appearance of the sclerotica. This symptom is always accompanied by a bitter taste, with a yellow tongue covered with a clayey matter, and trembling of the underlip; a feeling of plenitude in the stomach, efforts to vomit, frequent sputations, heaviness of the head, giddiness, a pain peculiar to the interior part of the head, anxieties, fetid diarrhœa, dark red or yellowish urine, desire for acid drinks, and ardent thirst.

The nervous intermittent fever presents itself in the eye, by a weak, uneasy, and frequently a stupid look; the face is, at the same time deformed, and the patient is light-headed.

The fever itself inclines towards the continent, and during the whole continuance of the apyrexia, heaviness, weakness, headache, giddiness, inclination to sleep, continue to take place; there also appear prostrations of the strength, vomitings, faintness, and diarrhœa. The urine is aqueous, sometimes red, fetid, thick, and passes with difficulty.

We remark, at this stage, palpitations of the heart, separate convulsive motions, the pulse is irregular, the tongue and the lips are exceedingly dry; great mental prostration and despondency; there appear, also, white swellings in the mouth, and in these moments the eye appears very weak, the eyeball more dilated, the iris relaxed, and its tension lost; the sclerotica has a dirty aspect.—Several of these phenomena take place even during the apyrexia.

The varieties of this fever, such as the nervous soporific fever, the syncopal fever, the algid fever, are equally to be observed in the eye.

In the syncopal fever, which is accompanied by extreme debility and vital weakness, the eye is dull, and resembles that expression which announces inward and chronic pains, or profound grief.

The soporific fever paints in the eye of the pa-

tient, stupidity, confusion, and the diminution of vitality in the sensible sphere.

In the algid fever, we remark in the looks a certain perplexity, mixed with unquietness and anxiety; sometimes the eye is attacked by convulsive motions, without, however, being red or inflamed; the sclerotica is never red, but always of a weak splendour.

In the concealed intermittent fever, we always observed the eye weak, and the patient looking sedate and sad. The sclerotica is then most frequently dirty, yellowish, and resembles that state which the eyes represent in gastric fevers; the eyeball is rather dilated than contracted.

The bilious intermittent fever, commonly accompanied by incidental symptoms arising from the liver and bile, offers a sad eye, which gives to the countenance a mournful expression, and the sclerotica seems to be dyed with a gamboge tinge. If this fever becomes splenetic intermittent, the eye is extremely weak, looking straight forwards, and has a greasy and very dirty aspect; the eyeball is very large, the sclerotica of a dark yellow: the complexion of the face is earthy, and all the phenomena denote at the same time, that the vital principle is vigorously attacked, as we see it in the pituitous fever, with this difference, that the symptoms are most distinct during the attack. The eye is generally weak, the eyeball larger, and the iris bent down, and a thick mucus is gathering in the corner of the eye.

Expression of the eye in typhus.

If we consider that the optic nerve, the tunics of the eye, and several other nervous ramifications, not less important, cross and surround the eye in its different parts; and if we reflect upon the communication that exists between the brain and the eye by means of these nerves, we can easily understand why the eye is intimately affected with such phenomena, and suffers such considerable plastic changes in the diseases of the nervous system, which attack particularly the head and brain.—And this fact is confirmed by experience: I have especially observed myself this truth in the nervous fever, therefore we will describe, with the greatest care, the expression of the eye in this disease.

The true idea of the nervous fever has been given to us by P. Franck, Hildenbrand, and by Raimann in his pathological and medical therapeutic manual. We admit it also as a basis, and it is after these views that we present our semeiological view of the eye in the nervous fever.

Selle called this fever, with its species, *febris atocta;* other authors call it—*malignant nervous, pestilential prison fever, fievre nerveuse maligne, pestilentielle, fievre des prisons.*

It is a certain fact, that in this fever sensibility is primitively more or less attacked. Inflammatory symptoms always attend this fever in each stage, and it preserves or loses the inflammatory type for a

greater or less time according to the constitution of the patient and the state of the atmosphere; for the inflammatory period may last several days, or only half a day, and even only some hours in complicated or very malignant fevers; therefore the treatment of this fever requires close attention, much judgment and sagacity, with a sound knowledge of ancient authors, and considerable practical experience.

The nervous system and sensorium are always more or less disturbed in typhus. The latter reigns sporadically, epidemically, with or without contagion, and assumes the gastric inflammatory or putrid character.

When this fever does not reign epidemically, but is rather sporadic, we have often remarked, that seven or eight days before the irruption of the fever, the patients had a certain premonition, which manifested itself in the intellectual and physical functions, but especially in the eyes.—These individuals had a sad and sometimes a slightly ferocious look, and the eye presented an air of discontent. The same fact has also been remarked by J. Skinner, in the plague which committed its ravages at Malta, during which the furious looks of persons who did not believe at all they would be attacked, were the precursors of the disease.—*See Philos. Mag. April* 1815.

The nervous fever is distinguished by the following characters: it begins with chills and heats; these two symptoms are never violent at the be-

ginning of the fever, the chill especially is neither very severe nor long, the burning in the head troubles the patient less than in the synochus and synocha. The fever is at first rather slight than violent, and the eye announces a sadness, interior pains, the tunic is brilliant, and the sclerotica slightly reddish; the eyeball a little more contracted than dilated.

This fever is irregular without a settled type; it is neither continued nor decidedly remittent. Several physicians have classed it among intermittent fevers. According to our observations it is a continued fever with irregular exacerbations, and changing suddenly. These symptoms moderate apparently, and often encourage hopes which are frequently deceitful, and the appearances of the eye are not less so, if we do not pay particular attention to it.

It is, therefore, indispensable to examine repeatedly, during the day, the eyes of patients attacked with nervous fever, especially during the exacerbation, and also when this state has moderated; by proper attention to this rule, and taking into consideration, at the same time, the other morbid phenomena, it will not be difficult to determine, in a pretty positive manner, the greater or less danger of the disease, for the nature of this disease can never be decided accurately, by deductions drawn from the malignancy of the symptoms during the exacerbations alone; it absolutely requires a true and synthetic examination.

In the course of this work we shall give the result of our numerous observations upon this interesting subject. Besides its individual character, this fever is distinguished by an extraordinary weakness from its very beginning, and we remark the oscillations and other nervous symptoms which characterise it. This prostration of strength, spontaneous lassitude and languor, which subdue the most robust as well as the feeble, are what principally characterise typhus.

This weakness is to be observed in the eye, during the exacerbation, by the following signs: the eye appears indeed sparkling, the sclerotica becomes also sometimes a little reddish, but this never happens in so high a degree as in the synocha; the iris is rather contracted than dilated; if there exists a violent trembling in the latter, and if, at the same time, the sclerotica appears dirty, it is a sign of malignancy; if during the momentary remission of the fever, the eye is very weak and dull, if the eyeball is dilated, the iris relaxed, the tunic troubled, and the sclerotica fat or of an aqueous white, this state of the eyes indicates the most violent affection of the sensibility in the organization of the patient. Besides that, we remark in typhus a trembling, weak, and uneven pulse, which P. Franck describes as very variable, sometimes full and equal, sometimes short, intermittent, and almost imperceptible under the finger.

In the stupid fever Franck and Reil have observed a full and strong pulse. In this dull nervous

fever, we have found the eye, in the highest stage of the fever, absolutely weak, and the eyeball dilated; it seems overwhelmed with sleepiness, as we see it in persons who have been suddenly awakened; the sclerotica is never pure, but is always troubled as if by tears. In the course of the fever the tunic is troubled and dull. This last symptom is more distinct in the moments of abatement; it is accompanied with a dull and heavy look, and the sclerotica is dirty.

The nervous state displays itself especially by spasms, palpitations of the heart, anxieties, trembling, fright, and by an exalted imagination. The motions of the soul alternate with the same rapidity as the pulse; the mind is dejected, sad, and discouraged; the patients laugh or weep sometimes: they have frightful visions, subsultus tendinum, and convulsions of all kinds; a stupidity manifests itself in the looks, local paralysis occurs, the senses become weakened, the eye ceases to distinguish objects any longer distinctly, the patients often complain of obscurity in the room, but which exists only in their eyes; they lose sometimes the power of speech, a symptom which disappears and appears again with equal promptitude.

As the sensorium becomes affected, delirium is manifest, and its severity is in proportion to the violence with which the brain and nervous system are attacked. It is sometimes, therefore, so violent as to amount to absolute phrenzy.—

During the delirium the eyeball is always contracted, and the eye, during the inflammatory period, resembles often the eye in the synochus. It is only in the remissions that it appears dull, and deprived of brilliancy and life; it is by this that we may know the difference in the fever.

We must, however, not neglect the examination of the pulse, and other morbid phenomena. If, on the contrary, the fever passes from the synocha to typhus or gangrene, the eye appears in the first case weak, the iris is relaxed, the tunic more brilliant, the sclerotica is bright. In the second case, the eye has a celestial look, and is surrounded with a particular light, the eyeball is larger than it was in the previous state, the sclerotica is of a humid, brilliant, whitish colour, the looks have something mysterious and energetic; in a word, language is inadequate to characterize the extraordinary appearance of the eye. It is necessary to have observed it as it appears in patients, to estimate properly the force of these observations.

In the versatile nervous fever (*nervosa versatilis*), the eye in the first stage of the disease is a little inflamed and brilliant, the sclerotica appears a little reddish, and the vessels of the iris are engorged with blood.

If the fever reaches its highest state, and if there exists at the same time a delirium, the eye during the exacerbation is altogether that of a furious man, and becomes ferocious and bright; the eye-

ball is much contracted, the coats shining and the sclerotica is very frequently red, resembling at this epoch the eye of a person with the synochus.

In the nervous fever, properly so called, (*typhus nervosus*,) the eyes are brilliant, steady, sometimes even inflamed, and a little shut. The hearing is alternately hard, then very good or very sensible: the disorder of the head alternates with dizziness, and a tranquil or violent delirium; somnolence with want of sleep, inquietude, anxiety, and dejection with gaiety.

The urine in this fever is at first aqueous, abundant, and then becomes milky; sometimes also of a lemon colour, with a mucous sediment. The other functions of the organization are not less variable than the pulse in nervous fever; the belly is sometimes too constipated, at other times too open, sometimes perspiration is too small, and at other times too free; the skin is sometimes too rough and dry, at other times it is covered with copious sweats; the exanthems appear often with the sickness itself, as happens in the measles.

In the course and during the last period of the sickness, we see the kernels swell up, there appear also parotis, bubos, bloody flux, and some vague pains are felt in different parts of the body. We remark gangrenous spots, or gangrene appears itself; respiration becomes painful, and convulsions and inexpressible pains, with the greatest weakness, take place.

In this period of the nervous fever the eye is ex-

tremely dull, the eyeball dilated, and the iris rather pale and relaxed. In this stage the patient sometimes appears to be getting better, and is suddenly cut off by death. The physician ought to be very careful not to be deceived by these apparently favourable symptoms, but pay particular attention, especially to these three essential points.

1. To the expression of the eye.
2. To the change of the moral character of the patient; and,
3. To the change of the pulse during this period.

The eye, in this last epoch of life, offers a particular and remarkable aspect; the eyeball is always larger, the iris has a reddish brown colour, and the albuginea is white, but aqueous; the eye is very sensitive to light, and absolutely cannot bear it; the looks are uncertain and variable; the mind of the patient is extremely sad or very gay, therefore he begins to weep or laugh in an extraordinary and striking manner.

The pulse at this epoch is remarkably variable, sometimes slow, regular, and undulating; sometimes violent and short or hard and short; sometimes intermittent and almost insensible. These changes happen more than twenty times during the day.

In contagious typhus, which is very seldom preceded by precursory symptoms, the eye is at

first weak in the exacerbation, the eyeball is more contracted, and a little dilated in the remissions. As long as the inflammatory period continues, the albuginea is reddish, and the looks are a little ferocious and bright; but this does not last long.

The other phenomena which we observe in the eyes, depend, in this kind of typhus, on the nature of the fever itself. Those who desire more knowledge upon this subject, may consult the excellent treatises of Hufeland, Horn, J. Günther, (Einige Bemerkungen ueber die jezt herrschende Fieberform, von D. Joh.T.Günther, in 8vo. 1814, s.40.) Professor Loebel (ueber das wesen und ueber die heilung des nervenfiebers in und um Jena, von Michaelis, 1813, bis Ostern 1814;) and the Annalen der heilkunst des yahrs 1814, April; artistische Mittheilungen.

Without doubt it is useless to repeat here, that there exist different species of this kind of fever. During the winter, especially when the sky is clear, and there reigns a dry east or north wind, the typhus is always of an inflammatory nature. In an inconstant spring, and at the beginning of summer, it is commonly gastric or bilious; in summer even, and in the beginning of autumn, it is putrid, and towards the last part of the season it offers a pituitous complication.

In the inflammatory typhus, we remark phenomena similar to those of the synocha, as for example; a hard pulse, which is sometimes full and sometimes strong, considerable thirst, the face red and inflamed, violent headaches, the

tongue and nose dry, pains in the muscles, the eyes red and inflamed with ferocious looks, the eyeball contracted, and the iris, with its vessels, red and choked up. The delirium in typhus is not tranquil, but violent and lasting; the urine is scanty, troubled, and inflamed; the stools are dry and not frequent, and the skin is rather dry than humid.

In the gastric nervous fever, the gastric state displays itself from the very beginning of the fever; the patients lose their appetite; the tongue is much covered with slime, the whole vegetative system is depressed, the complexion is yellowish, the stools are thin and fatiguing, and the fever offers the remitting character; the eye is of a dirty yellow. In the course of the fever the tongue becomes more yellow; the periphery of the skin assumes a bad colour, and the sclerotica a saffron colour: the eye itself is weak, sad, and sunken; hiccough, violent headaches, a feeling of oppression in the pit of the stomach, a thick, clouded and brownish urine, which becomes aqueous in the remissions, and violent deliriums, characterise this kind of typhus. To these symptoms soon succeed convulsions, subsultus tendinum, swoons and lethargy, and convulsions end the last period of life.

In this last period the eye is extremely dull, with occasional ferocious looks, similar to those observed in the last stage of dropsy of the head; the albuginea is of a clouded yellow, and the eyeball large.

The pituitous typhus indicates its nature from the very beginning, by the prevalence of slimy matter in all the vegetative organs, joined to the characteristic symptoms of typhus. In this nervous fever, the mouth and the eyes are, from the beginning of the first period, covered with a clayey matter; the tongue is covered with a whitish mucus, and the stools are slimy; the urine has a slimy sediment. The pulse, from the beginning to the highest degree of the disease, is weak, slow, short, and intermittent; the fever is not continuous, but slow. The weakness of the patient is extraordinary, and the vital strength is extremely depressed. We have remarked in the patient dizziness, and dilatation in the eyeball. The eye appears weak, the tunic is troubled by slimy matter, and the albuginea appears of a white mucus.

In the course of this fever we commonly observe to occur the white miliary, hiccough, swellings in the throat, and a pituitous peripneumony; these symptoms are accompanied by an insupportably fetid smell.

In the highest degree of the fever, sensibility is violently attacked, so that there result from it the risus sardonicus, with chattering of the teeth, want of sleep, accompanied by continual delirium, the stupor of convulsions, until lethargy appears, and terminates these sufferings. In this last period of the disease the eyes are half open, dull, filled with tears, and the looks display stupidity and weakness of mind.

Of all the kinds of typhus, the most terrible and the most dangerous is the putrid typhus (*typhus putridus*,) for from the very beginning of this fever there exists an extreme nervous debility, accompanied by a tendency to the chemical decomposition in the vegetative and irritable sphere of the organization.

This fever is a remittent continent, and is distinguished by a great prostration of the strength, with debility of the senses. The heat is continual, sharp, and corrosive (*calor mordax.*)

In the beginning there are remissions, but the exacerbations of this typhus are violent, appetite is entirely wanting, all the excretions of the body have an insupportably fetid odour, and we commonly observe petechiæ and bloody flux accompanying this fever. The weakness augments every day, the pulse is weak, short, depressed, and often very slow; the delirium which only presents itself during the exacerbations, becomes permanent in the course of this typhus; the tongue, which is at first whitish and mucous, appears to be covered with a black crust. From the very beginning of the fever the eye appears dull, and loses afterwards all its splendour; the cornea and the albuginea become dirty; the iris is relaxed, and the eyeball constantly large. The eye becomes afterwards greasy, and the albuginea assumes a reddish colour, inclining towards green. The patient hears with difficulty; the various symptoms follow each other rapidly, and the excretions are much augmented. In con-

sequence of it the typhus distinguishes itself by weakening sweats, by hemorrhages and fetid stools; the sensorium is entirely shaken, and we observe distinctly the decomposition of the humors. In the last period of this putrid typhus, we always have found the eye very weak, the albuginea greasy, of a ceruse white or ash gray; the eyeball was very large and insensible, and the looks appeared inanimate, sleepy, and stupid.

As to the other symptoms, we request the reader to compare them with those of the putrid fever.

Expression of the eye in the slow fever (typhus mitior.)

The slow or hectic fever may exist primitively or secondarily, and attack preferably one or the other system of the organization. It may also appear as a fever concomitant with one or the other system or morbid organ, consequently there can be an *inflammatory* hectic fever, a *lymphatic* hectic fever, and *nervous* hectic fever.

Not being able to engage in a particular pathological view of these fevers, we pass to the semeiological expression of the eye, adding to it the characteristic and necessary symptoms of the fever itself.

What especially distinguishes this disease, is the insensible exhaustion of the vital forces, and its protracted duration. Its beginning often de-

ceives the physician; the pulse is weak, hard, uneven and quick, especially after dinner and supper. The fever has irregular exacerbations, which appear several times during the day, or which appear the second or third day.

At the moment of the exacerbation the eye is sprightly and brilliant, and the eyeball only a little more contracted than in health; in the time of remission, on the contrary, the eye is weak, the iris relaxed, and the eyeball rather large than small; the albuginea is indeed white, but has a brilliant and aqueous aspect.

To these symptoms we may add the following: the patients complain of a moderate chill, but still more of a temporary heat, disagreeable and burning to the touch, without being insupportable: the heat in the insides of the hands and the soles of the feet, during the exacerbations, is a characteristic sign; the urine is not discharged often, and is clear and limpid like water during the remissions; but during the exacerbations, it is of a lemon yellow, sometimes of a red, and a red sediment; it has often precisely the smell of violets.

In the course of the disease, we observe on the surface of the urine greasy spots, or a greasy skin of a milk blue colour, which attaches itself to the pot; the stools are rather soft than hard; however, we have found them hard, and similar to laurel berries, in the first weeks of the sickness. Thirst is always augmenting, especially at night; the patients complain, at the same time, of a disagree-

able dryness of the palate and the throat. During the exacerbation, respiration is augmented, and the least motion of the body causes dyspnœa. It is very seldom that we do not observe, at the same time, an extreme lassitude and a dry cough; the cheeks have sometimes a very bright circumscribed red colour, sometimes they are pale and cachectic. Appetite is interrupted, but only during the course of the sickness. Sleep is uneasy, and does not refresh the patient; the body wastes away, we may almost say, melts. The eyes sink deeper into the orbits, flesh disappears every where, and the bones are prominent. The skin fades away, relaxes, and becomes covered with wrinkles; the hairs fall out, the nose becomes sharp pointed, and the patient looks like a true skeleton.

During the exacerbation, we remark a tranquil delirium. Finally, the voice changes, it becomes difficult and hoarse; the hands and feet swell. In this period the eye appears much troubled, the iris extremely pressed down, the eyeball more dilated than contracted, and the albuginea is of a snow white.

We remark the sufferings of the patient by his looks, which excite pity and presage death. An easy end terminates the life of the patient, and we may well say, that it is extinguished like a candle.

The *inflammatory* hectic fever presents inflammatory symptoms, that accompany it from the beginning to the end. The eyes present in this hec-

tic fever a vivacity and an extraordinary activity, though they are deeply concealed in the orbit; the albuginea is always of a milky white. In the first stage, the eyeball is a little contracted, but it becomes afterwards larger; the eyes are also often in tears. The pulse is indeed small, but always a little hard. The urine is dark, or of a vivid red colour. It is the phthisic, called *galloping consumption* (*phthisis cursiva*,) which displays a strong and edged red on the cheeks, a sign which denotes the affection of the lungs. This fever is rather continent than remittent.

The *gastric* hectic fever is recognised by a general prostration of the whole vegetation of the organization; besides that, appetite is wanting from the beginning. We remark also a mucus of a yellowish white, which covers the tongue of the patients, who are tormented with flatuosities and temporary vomitings. Diarrhœa appears afterwards; the colour of the face is cachectic and inclining towards yellow; we observe even some symptoms of the jaundice, which disappear and appear again alternately.

The patients feel a disagreeable pressure in the region of the liver, as if there were a stone upon it; the fever is remittent. The eye offers a sad and mournful aspect; the albuginea is of a saffron yellow, or greasy aspect; the eyeball rather dilated than contracted.

During the progress of the disease, the eyes sink deep in the head. The patients display anxiety:

the pulse is uneven, frequent, weak, trembling, and intermittent; weakness exists there in so high a degree, that the patients cannot give any idea of it.

The *nervous* hectic fever is distinguished by nervous symptoms, by a limpid urine with a mucous or whitish sediment; the pulse is as variable as all the other nervous and transitory phenomena which appear; dizziness, palpitations of the heart, sadness, sighs and tears characterise this fever.— The eye appears very dull and deeply concealed in its orbit; the looks are inanimate, and cannot well sustain the influence of light, afterwards they have a stupid air. The patients are then very easily irritated, and besides very sensitive; they are, during the exacerbations, in a delirium, and easily frightened. The faculties of the mind are affected; they diminish, and we remark in the progress of the disease, that the patient falls into fits of mourning, even after the time of the exacerbations. The pulse becomes variable, there is want of sleep, convulsions, and the whole train of symptoms indicating deranged sensibility appear; at last paralysis puts an end to the patient's miserable existence.

The *pituitous hectic* fever, which some physicians call *lymphatic*, is generally very slow in its progress, and has, at the beginning, an *intermittent* character. The patients have the face swollen, cachectic, and of an uncommon paleness; the eye is disturbed, aqueous, and a slimy matter is seen to form in

spots about the cornea; the eyeball is much dilated, and the iris pale and dull. Digestion suffers, and the patients are tormented with flatulency and vomitings; they have an inclination to sleep, the head is confused, the respiration difficult, and increasing at times to an extent resembling fits of asthma.

The feet and hands swell, the deglutition becomes painful; we remark, also, white swellings in the mouth, the strength diminishes sensibly, the fever becomes continual, and hiccough, syncope, and diarrhœa conduct the patient to the grave. As to the pulse, it is very variable, and becomes towards the end, quick, frequent, and intermittent.

Expression of the eye in several local inflammations of the organization.

Notwithstanding the very great changes which the eye presents, both in primitive and secondary fevers, it undergoes as numerous and varied changes in local inflammation of the several individual organs.

We can only briefly expose here the symptoms which relate to semeiology, referring our readers for what concerns pathology to the classical works of Conradi, D'Zondi, Sprengel, Mayer, Richter, Wilson, and Vanderbosh.

Expression of the eye during an inflammation of the brain.

A characteristic sign of this inflammation is a feeling of burning heat in the head, with a sensation of cold at the extremities. This symptom appears always at the first period of the inflammation, and disappears afterwards. Delirium also characterizes this inflammation; it begins by a grinding of the teeth, and proceeds even to phrenzy; it does not exist at the beginning of the inflammation, but developes itself during the course of the disease. It is only in a violent inflammation of the brain, that the delirium commences immediately with the inflammation.

In inflammation of the brain with a nervous character, where the sensible system is more affected than the irritable system, the fever is not less violent; the pulse is small, often extraordinarily frequent, but very variable; the pulsation of the temporal arteries is strong, and the temperature is augmented; a steady pain demonstrates to us the seat of the inflammation of the brain; but ordinarily I have witnessed patients complain of pain at the occiput. When the pain manifests itself in the commencement of the inflammation, if it extends to the neck, then the inflammation is in the cerebellum.

It is true that this inflammation is more painful in its course, but it is not so dangerous as the in-

flammation of the brain itself. The pain is extended, during the progress of this disease, over the whole head; sometimes it is accompanied by so severe a pulsation as to induce syncope.

The eye, in the commencement of inflammation of the cerebellum, is red and brilliant; the pupil is more contracted, the veins of the iris are engorged with blood and of a clear red, and the albuginea is of a rose colour. The eye is very sensible; when the brain itself is inflamed, the pupil is more dilated than in inflammation of the cerebellum; the eye, it is true, is inflamed, but not so brilliant; the albuginea is white and brilliant; the veins of the iris are not so engorged with blood. The eyes suffer, especially in the evening; they are dry during the exacerbation.

Experience has shown to me, that the inflammation of the brain, which has an inclination to the synocha, offers a red eye, dry and brilliant; on the contrary, in that which attacks the sensibility in the vegetation, the eye is more suffused with tears.—The pure inflammation of the sensible system is characterised by a sentiment of pressure in the eye, with ferocious looks, the pupil dilated, and unable to support the light.

The looks become stupid, sometimes the eyes are very moveable, and the patient squints. The eyelids are ordinarily closed, and the patient cannot open the eyes, except with great pain. The senses suffer, and the face is red; the cervical and temporal arteries beat strongly; it is accompanied

with a mild or violent headache, which reaches the highest degree in the moments of exacerbation. It is necessary to observe the pulse, and particularly the eye in these moments, and you will be convinced of the danger of this inflammation.

The respiration is difficult; the mouth, the tongue, and the skin are dry; the patient cannot sleep, and vomits frequently. In this period I have observed a great sensibility in the eye, and the pupil to be dilated. When the inflammation has reached its highest degree, the urine and stools pass involuntarily, and sometimes they are retained; the muscles of the face are contracted; the extremities cold. Finally ensue risus sardonicus, trembling of the limbs, syncope, convulsions and death.

The principal characteristics of this inflammation are also—a heaviness in the head, a debility of the senses, febrile excitement, a great irritability, the head very warm, a preternatural gaiety or sadness, vomiting, trembling of the limbs, steady and ferocious looks; the eye is dry, the albuginea extraordinarily red; in the course of the disease, the pupil is dilated, the face is red, and the tongue white and dry. Finally, delirium succeeds, and, at the same time, the pulse is variable, small, or trembling. In this inflammation the eye is a true mirror of the affection of the brain.

The prognosis in this inflammation is unerring: when the cerebral substance is affected, the prognosis is nevertheless doubtful; the younger and more

delicate the patient is, the less favourable is the prognosis. Children commonly fall victims to this disease. If the eye loses its ferocious looks, if it becomes more calm, if the eyeball diminishes, if the trembling of the limbs and the vomiting cease, if the strangury, anxiety, gnashing of the teeth, diarrhœa, subsultus tendinum, and paleness of the urine diminish, if anger and fury and gaiety or sadness disappear, we may hope for a recovery.

We may foretell death: if we remark a continual mastication, and a difficult and suffocating deglutition: if, at the same time, the eye appears large and squinting, if the albuginea is dirty or appears as it were covered with dust, if the eyeball remains dilated, and the vomitings continue, especially when it resembles coffee grounds, these are all so many signs of an approaching death.

Expression of the eye in inflammation of the lungs, (peripneumonia.)

In this inflammation the organs of respiration are generally attacked, in the same manner as in inflammation of the cerebellum, the brain is affected, and by that, the intellectual functions more or less troubled, in the same way as the functions of the respiration are troubled in inflammation of the lungs.

The fever which accompanies the inflammation of the lungs, is continent: often the signs of a topi-

cal affection precede by a long time the fever. If, on the contrary, the inflammation is violent, the fever appears almost at the same time.

In those cases where the topical affection of the lungs precedes the fever, the eye is not so red and sparkling, but rather brilliant, and sometimes a little aqueous. The albuginea is white, and a little brilliant; the looks are suffering, and rather arch. But if the fever appears at the same time with the inflammation, the eye is of a brilliant red, the face is alternately of a dark red, inflamed or pale; the arteries of the neck beat briskly, and these symptoms are often accompanied by a violent headache: a difficult respiration is joined to these phenomena, with a strong pain in the breast, which often becomes very violent.

But the gradations of the pain follow the course of the local affection of the inflammation: they are dull or heavy, then tearing, and the respiration augments the pain. The patient seems scarcely able to respire, and when he attempts to speak or move, it is with great difficulty and uneasiness; the cough exists from the beginning of the disease and is dry, and the spittle is mixed with striæ of blood; the white fur upon the tongue, the dryness of the mouth, and the fine red of the lips, never fail to appear.

The pulse is quick, frequent and unequal, heavy, and even often as full as in the synochus, and as softly undulating as in the synocha; the heart beats strongly, the skin is dry, and the periphery of

the breast is sometimes, though very rarely, humid and wet. This happens especially in the first days of the affection. The urine is seldom passed, and is of an inflamed red, or it passes abundantly, and is tarnished or limpid, having the appearance of Rhenish wine, with an odour of sulphur; the stools are rare and hard, often brownish or similar to laurel berries.

The genuine and well established peripneumony is always accompanied with fever, with a characteristic feeling of heaviness and oppression in the breast, accompanied by a cough which appears with a painful respiration, and which augments the pain in the breast.

As long as the substance of the lungs and the pulmonary arteries alone are attacked with inflammation, and the disease has not yet reached the branches of the pleura, we remark neither the dull pain, nor the hoarse voice, or the other catarrhal symptoms.

In the peripneumony only one lung is sometimes inflamed, and sometimes both. In the first case, the breast rises less high on the side of the inflammation. If both lungs are inflamed, we perceive no elevation of the breast, and respiration takes place by the agency of the diaphragma and abdominal muscles only. In this instance the eye has something characteristic.

When the inflammation is confined to one lung only, the eye of the affected side is always redder, and casts more ferocious looks than the other.—

It is very important to pay proper attention to these phenomena of the eye, especially in the first days of the inflammation of the lungs; for from the very moment that the inflammation has made some progress, and has reached a high degree, this distinctive character no longer exists, the two eyes being then equally red and inflamed.

To these phenomena we may also add the following: when there is but one lung inflamed, the pulse of the affected side is different from that of the opposite side—it is always quicker, more firm, more close, and more unequal.

If both lungs are attacked at once, the pulse is about the same on both sides, which happily happens but seldom at the beginning of the peripneumony; but nevertheless I have observed this in a very delicate lady whom I attended with this affection in Philadelphia.

We must, at the same time, pay proper attention to the action of respiration. If, from the commencement of the disease, respiration is difficult and constrained, accompanied by great anxiety, we may almost always conclude that both lungs are inflamed, the respiration being never so violently attacked in the first period of the inflammation when only one lung is attacked.

We have also, in many cases, to consider the position of the patients. Experience has taught us that they lie best on the side where the inflammation exists, whilst when both lungs are inflamed the patient prefers to lie on his back.

According to the observations of Hippocrates, the tongue is also a characteristic sign of the peripneumony. If it is white but on one side, it is a proof that the lung is inflamed on the same side; if, on the contrary, the tongue is entirely white, both lungs are affected. It is thus, that the ancient physicians considered also the pain of the clavicle as a pathognomonic sign of the inflammation of the lung, and pretended that, when there was but one lung affected, the clavicle was painful but on that side, whilst, when the pain existed in the two clavicles, the inflammation then existed in both lungs.

The symptoms of inflammation of the lungs which we have just described, are of no value for the physician who considers them separately; they only become useful in examining and considering them collectively.

It is then, only, that they lead to sound reasonings, and then only are of advantage alike to semeiology and therapeutics. We observe, besides, that the true peripneumony is influenced by the cold of winter and approach of spring.

The peripneumony, like all internal local inflammations, may terminate by resolution, suppuration, or by adhesion, scirrhosity, or gangrene, and all these transitions are to be seen in the eye.— From the moment that a peripneumony resolves itself by expectoration, bleeding of the nose, sweat, or by a sediment in the urine, the eye loses its inflamed and sparkling, and at the same time, un-

quiet appearance: the redness disappears, the eyeball which is a little contracted, resumes its normal forms.

The engorged vessels of the iris are no longer visible; the looks of the patient become milder and more composed, and with this return of calmness in the eye, the other violent symptoms of the inflammation are observed to diminish also.

If peripneumony is accompanied by suppuration, the inflammation of the lungs does not disappear entirely; it terminates not however at the critical epochs of the seventh, eleventh, or fourteenth days, but a great deal later.

The fever exists steadily either in a continued or remittent form, and abscess or vomica takes place. It passes frequently into suppuration in young, robust, and plethoric people, especially those who are fair and of a delicate and irritable constitution. It is true, that in these circumstances the eye loses its fire and uncommon redness; the iris appears less contracted and bent; the eyeball resembles exactly an eye that has wept much; it is aqueous, tarnished, and announces sufficiently by its looks, that there still exists an internal affection.

We add further that the eyes lie very deep in the orbit, and that the patient is much tormented with a dry cough, the critical motions do not take place, the sweat is oily and clammy, the pulse frequent, soft, and sometimes irregular. The urine is at the same time troubled, and smells like oil or

violets—(these three signs are characteristic.) A circumscribed redness appears on the cheeks, and the nose becomes a little pointed.

At the place where, during the inflammation of the lung a painful sensation was experienced, the patient then feels a heaviness or an oppression similar to a weight lying on it: he can only lie with comfort on one side, and if he were to attempt to rest on the other, he would experience considerable distress and difficulty of breathing.

The inflammation of the lungs sometimes changes into scirrhus or induration, which often happens with weak and scrofulous people, in whom a vicious system and the vegetative element predominate, and if at the same time a cold and humid atmosphere exercises its influence on these persons.—Peripneumony, which is not very violent, terminates often on the eleventh or fourteenth day without any critical evolutions; the inflammatory stage ceases indeed, but the pulse is not therefore the less quick; there exists, also, at that time a dry cough, with stitches felt at intervals in different parts of the breast.

The different positions which the patient takes in his bed, occasion him anxieties and some constraint in the respiration, although there is at the same time an appearance of getting better. In these circumstances the eye appears dull and afflicted, and is very sensible to light, the albuginea is white and not inflamed, but it is of a disagree-

able whiteness, the eyelids are sometimes swelled and attacked by an erysipelatous inflammation; the glandulæ meibomii are a little tumefied and greasy, which is a characteristic phenomenon.

If at last peripneumony terminates in gangrene, which commonly happens with young, robust, and plethoric persons, when they are attacked with violent inflammation of the lungs, respiration becomes extremely painful, and the circulation of the blood is constrained, the patients become very inquisitive, the powers of the system diminish very considerably from the beginning of the disease; the pulse is short and irregular, and sphacelus follows the gangrene immediately.

The extremities and the face turn cold, and the pains of the breast cease suddenly; the fever continues, the breathing is quick and cold; it ceases entirely, or there appears a blackish bloody expectoration mixed with a tarnished lymph. During the gangrene the eyes have a heavenly appearance, but they cast nevertheless unquiet looks upon objects; they remain fixed, especially upon their physician, with a particular pleasure.

At the beginning of the gangrene, the eyeball appears smaller; it becomes a little larger, but only after some hours when the gangrene has already made some progress. The iris has a heavy appearance, but spreads at that epoch an extraordinary brightness, similar to a divine areola, which gives to the eye this celestial appearance by

which the end of life commonly announces itself. —To establish a reasonable conjecture, it is not sufficient to pay particular attention to the phenomena which the eye presents, because in this disease it is principally the affected part which can furnish us with the best information, and enable us to ascertain whether the affection exists in one or both lungs. We must also appreciate properly the pulse, the secretions and excretions.

Not to pass the limits we have prescribed ourselves in this work, we shall briefly remark, that if, after a critical evacuation the eye loses its redness and savage fire, if it casts calm looks around it, and if, at the same time, all the other organic functions act with more regularity, (especially if there is but one lung affected, or if the inflammation has attacked but the outside and not the substance itself of the lung,) we may reasonably foretell a happy termination.

In peripneumony it is very important to pay particular attention to respiration, for it determines particularly the prognosis. However violent the symptoms may be during the course of the disease, provided the respiration be not too painful, we may, in most cases, foretell a happy issue; but if the respiration is very difficult, and accompanied with agony, all other symptoms, however mild and favourable they may appear, are absolutely deceitful. The inflammation in this case is extremely dangerous, and terminates commonly with the death of the patient.

The termination of peripneumony is almost always mortal, if the patients are tormented with violent palpitations of the heart, accompanied by an oppression of the breast and agony; by swelling or paralysis of the arms; if they throw themselves with uneasiness from one side to the other in their bed; if the inflammation of the heart is united with that of the lungs; if the eye presents alternately an aqueous, troubled, and ferocious aspect; or if it melts in tears, and finally, if there appears unexpectedly a hydrothorax or phthisis. Examine on this subject the classical works of S. G. Vogel, K. Sprengel, P. Franck, Conradi, Stoll, Quarin and Triller.

Expression of the eye in inflammation of the liver, (hepatitis.)

It is remarkable that all kinds of inflammation of the liver are not constantly accompanied by icteric symptoms.

When the convex side of the liver is inflamed, we remark a steady pain in the region of this organ, a pain which rises even to the neck. The lower belly is bent, and there exists, at the same time, a dry cough; the pulse is firm and full, often easy, and more or less quick.

The right side of the face is redder than the left, and the right eye is weakened at the begin-

ning of the inflammation; the eye appears lively and reddish, but the sclerotica is disturbed; the looks of the patients are then gloomy and suspicious; the mouth is dry, and heat and thirst appear. The urine is redder, the patients begin to talk nonsense, they have a painful feeling at the point of the shoulder, or at the clavicles, and severe cramps in the right calf of the leg. It is impossible for them to sneeze, the patients suffer from a pulsation in the epigastric region, and are subject to cardialgia, cramps and hiccough.

The signs of the inflammation of the concave side, are different from those of the inflammation of the convex side. We observe vomiting, a bitter taste in the mouth; the patients have spasmodic tensions in the precordial region. In this inflammation we observe distinctly the symptoms of jaundice; the albuginea is of a saffron colour, the eye has a desponding look, the pupil contracted, the iris is of a brown yellow, and the veins engorged; the saliva, stools and skin yellow; the urine particularly yellow, with an aspect of red; the pulse slow, and the bowels are constipated. The patient complains of a load at the pit of the stomach, sometimes pain in the shoulder, with a feeling of burning internally; finally, the symptoms which distinguish the inflammation of the convex side of the liver appear.

When the seat of the inflammation of the liver

is established in the substance itself of this organ, the patients feel inexpressible anxiety, the pulsation in the region of the liver is extremely violent, as is also the fever and the internal heat. The pulse is very slow; the eye expresses an anxiety, and is especially brilliant in the evening and at midnight; the pupil is contracted, the vessels of the iris are engorged, and of a red brown; ordinarily, the eye begins to become yellow a few days before the inflammation is entirely developed.

When the inflammation is more deeply seated in the liver, the eyes begin to become yellow four days before; the urine, at this period, is of a dark red, and after that the inflammation is manifested by a febrile chill; the pain is violent.

When the right lobe of the liver is inflamed, the icteric signs are not so distinctly manifested in the organization; the eye has more of a brown aspect, and the patient cannot turn on the left side. When, on the contrary, the inflammation has reached the left lobe of the liver, which happens frequently in the West Indies, the patients are attacked particularly with a great sensibility, pain, and tension in the region of the stomach.

The icteric symptoms are visible in the urine, and particularly in the eye.

The chronic inflammation of the liver is equally visible in the albuginea of the eye. The patients complain of a feeling of heat, dulness and heaviness in the region of the liver, as well as of obstinate

pain, which becomes more sensible when we touch the afflicted part. This inflammation also distinguishes itself by a tumefaction of the liver, which sometimes becomes considerable; to which symptoms we may also add difficulty of lying on the left side, or on both sides, a feeling of oppression in the right shoulder, and pains in the right calf of the leg. The face is earthy, pale or yellowish; the eye is not of so pure a yellow as in the hepatic ague, but rather of an unclean yellow, as if it were dyed with gamboge: the eyeball is a little dilated; the iris is not much bent—its arteries are flabby and of a pale red.

The looks of the patient are dull; he is sad, diffident, and thoughtful. Then follow pains in the stomach, an imperfect digestion, a slight fever which is almost imperceptible, and often obstinate ulcers in the legs. The mind is, at the same time, affected; the patient is entirely dejected, sometimes even to despair. The urine is of a saffron colour, often of a dark red, and stains the linen yellow.

It results from the characteristic symptoms which we have just mentioned, that the inflammation of the liver, acute as well as chronic, appears in the eyes under different shapes. We remark that in the acute, the fever disappears sooner than the fixed pain and icteric signs of the face, eyes, and skin.

The termination of the inflammation of the liver may be observed by the diminution of the icteric

symptoms. If the inflammation becomes entirely reduced, the yellow tincture of the eyes and face diminishes, the fever and settled pain in the region of the liver abate, and finally cease altogether. The urine loses at the same time its black or dark yellow colour; the constipation of the lower belly ceases also, and the stools, until then white or grayish, begin to turn yellow; the oppression and feeling of repletion in the epigastric region also disappears, as well as the swelling and insensibility; the feverish heat, the exacerbation towards morning, the gastric symptoms and thirst diminish, and the patient feels himself generally in a better situation.

The happy issue of the inflammation of the liver is doubtful if the excrements resume not their natural colour. It was thought a very favourable symptom for the termination of the inflammation of the liver if there appeared some pains in the spleen, but practice has taught us, that this symptom was absolutely false and deceitful. Bleeding at the nose can be regarded as a happy omen only when the icteric signs disappear at the same time.

Should this not be the case, however, and the symptoms generally increase rather than diminish, and the inflammation appear to be augmenting, this symptomatic bleeding at the nose indicates that there exists an accumulation or dissolution of blood in the veins, which, according to our observation, frequently becomes mortal.

After a critical and beneficient bleeding of the nose, the eye commonly becomes more calm; it loses its ferocious looks, the yellow colour turns paler, and it becomes more and more clear and white.

But if the inflammation of the liver terminates by suppuration, the icteric symptoms do not disappear entirely; they only diminish a little. It is in these cases especially that we have paid the greatest attention to the eyes, and experience has taught us to expect to meet with the following phenomena exhibited in the changes of the eye.

1. The yellow colour of the eye never disappears entirely; it diminishes a little for a time, but commonly returns after one or two days.

2. During the period of suppuration, the eye is not of so clean a yellow, as during that of the inflammation, it is rather of an unclean or brownish yellow.

3. We have besides remarked upon some parts of the eye, some striæ or threads of mucus, which appear to be quite thick; the eyeball was a little more dilated during the period of the inflammation, and the iris appeared slack or relaxed.

Such are the symptoms which we have constantly observed in the eyes of patients, during the suppuration of the liver. At the same epoch the violent pain of the local affection in the right side ceased, but there still continued in the affected

part a sensation of fulness. The exacerbations were accompanied by slight shiverings; the urine was brown, troubled, and dark in colour, or had a reddish ground; the stools were liquid, tarnished, and fetid; the patients then had a pulsative pain, very sensible to the touch; the vital powers diminished rather than augmented, appetite was wanting, and thirst increased. The patients perspired much; the whole right side was benumbed and insensible. A severe pain was felt in the right shoulder, and an almost insupportable pain seized the legs, especially the calves.

We may foresee the termination of the inflammation of the liver in scirrhus, if the fever that accompanies the inflammation is not very strong, and rather remittent; if the exacerbations are not too violent, if the progress of the inflammation is not active but rather slow, if the heat is not very burning, nor the topical pain very acute, the affected part, however, being somewhat painful. We may particularly foretell its termination in scirrhus, if after the seventh or fourteenth day of the disease the fever is not too strong, diminishes sensibly, and is scarcely marked during the exacerbations; if the eyes preserve their yellow colour, if the eyeball does not change, and the look is gloomy and abstracted; if, moreover, the patients are sad and dejected, if the feeling of pressure in the right side continues to take place, if the stools are not regular, if the digestion suffers, if the excretions are of a grayish colour, clayey or bilious, if the

appetite is deranged, if the precordial region is tumefied, if the respiration is constrained, if the right foot or the whole right side is swelled, if the urine is troubled and flows scantily, and presents a reddish ground, we cannot, after these signs, doubt of the inflammation of the liver.

To the symptoms we have just mentioned, we may add—constipation or the flux, piles, consumption and decay.

If the inflammation of the liver terminates by adhesion, for example, the liver contracts an adherence with the diaphragma, the peritoneum, or with any other organs of the lower belly ; in these cases we see no icteric symptoms, and it is very difficult to form our judgment upon this termination.

We may, however, admit adhesion to have taken place,

1. If the patient casts sad looks around him similar to a person overwhelmed by profound grief; if the eye is deeply concealed in the orbit, and if the sclerotica is rather aqueous than pure and dry.

2. If the inflammation of the liver terminates without critical evolutions, and we observe neither scirrhus nor suppuration.

3. If all the functions of the liver, and of the biliary system operate naturally, and the patient is tolerably well, and complains only of a permanent feeling of heaviness in the region of the liver, if at the same time respiration is a little painful, and if

the patient has a painful sensation when we touch the place where the seat of the inflammation of the liver was.

The inflammation of the liver may also terminate by gangrene. The phenomena of the gangrene are the following: the topical pain as well as the fever disappear suddenly, the lower belly is swelled, the excretions have a fetid odour, the pulse becomes trembling, short and irregular: delirium appears unexpectedly, accompanied by extreme weakness, cold sweats, cold extremities, and the hippocratic face; the clear yellow of the eye turns brown; the eye itself takes an unquiet and ferocious air.

We also have found at this epoch something particular and characteristic in the iris; the extremity which concurs to form the eyeball, appeared to us extremely changed in the first hours of the gangrene; the eyeball is more contracted than dilated, but it becomes larger, and even in the last moments of life it is not exactly round, but irregular and dented.

It is without doubt useless to remark, that violent inflammations which show themselves such from the very beginning, which attack the liver entirely, and which are not well treated, terminate often in gangrene; which often appears also when the hepatitis assumes suddenly the character of the typhus, or is complicated with the putrid diathesis.

According to Marcus, it is especially in autumn that this disease is subject to degenerate into gangrene.

In the acute inflammation of the liver this dangerous inflammation happens commonly the seventh or fourteenth day after a violent anger.

We do not speak here of inveterate hepatitis; the prognosis of the inflammation of the liver is relative, and must be influenced by the location of the inflammation in the organ itself, and different coincident circumstances. Associated with synochus, and during winter, hepatitis, although very violent, is however less dangerous than when it occurs at other seasons, and with other complications. United with synochus in summer, it is very decidedly dangerous, and its termination involved in doubt and uncertainty. The greatest danger exists in autumn, when the disease is united with typhus.

The inflammation of the liver may become dangerous, if the upper and convex part of the liver is violently attacked; it is less dangerous, however, if the inferior and concave part is attacked. In the first case, the inflammation is more violent, and has a quicker progress; it is very dangerous in the first period. In the second case, on the contrary, it is more mild and less rapid in its progress, and only when it may be productive of other troublesome affections, and in some cases even of fatal consequences, becomes dangerous in the last

periods. The prognosis, therefore, in this species of hepatitis is more difficult and less certain.

Marcus says: "The prognosis of the hepatitis "is more or less favourable according to the con- "stitution of the body, the temperature of the air, "and the concomitant fever. Young and plethoric "persons are more violently attacked; the danger "appears greater, and it is really so if the patient "be not carefully treated, but the sickness termi- "nates in a little time, without leaving fatal con- "sequences, if proper remedies are prescribed.— "With persons of a bilious or atrabilious con- "stitution, or with those who are weak, the attacks "are, it is true, less violent at the beginning, and "the sickness takes a slower step, but the conse- "quences are more serious, especially if the or- "gans and the functions of digestion, as it often "happens, are disturbed."

According to our observation, the prognosis of the inflammation of the liver is less dangerous in winter, when it attacks young and strong persons, because the inflammatory symptoms commonly terminate with the critical evolutions, the sclerotica becomes clear, the ferocious looks become mild and peaceable, the icteric symptoms disappear, the saffron colour of the urine changes to lemon yellow, with a little sediment, constipation ceases, the local pain in the region of the liver, with feelings of repletion, diminish by degrees; the tongue becomes clear, the appetite and strength return, and the fever ceases. These changes are perma-

nent, and there is no relapse, provided the patient does not commit any errors in diet, and has the benefit of correct medical advice.

For additional information on this subject, the reader may consult the writings of Stoll, Van Swieten, P. Franck, S. G. Vogel, A. G. Richter, K. Sprengel, Conradi, Reil, Clark, J. G. Bovel, Marcus, and Raimann.

Expression of the eye in different diseases of the vegetative system, presented in an aphoristic manner.

In the beginning of a gonorrhœa, in the measles and catarrhs, we remark particular phenomena in the eye.

In the first period of gonorrhœa the albuginea is at first of a pale red, aqueous, and afterwards unclean. In chronic and inveterate gonorrhœa, the eye appears a little wandering, and covered in some places with mucous striæ. The eyeball is rather dilated than contracted, and the iris is relaxed.

In simple catarrh the patient begins to sneeze strongly, and a sharp humour runs from his nose in proportion as the disease progresses; this humour often disappears, and a dry rheum appears in its place. The eyes begin to burn, they fear the light, and are a little red; tears appear in great abundance, and are sharp. Sometimes we observe even

true catarrhal ophthalmia. We also often observe the eyelids closed on account of the great sensibility of the eye to light.

In the second period of the catarrh, when the patient begins to spit, which announces a local crisis of the catarrh, this critical motion is also to be seen in the eyes, for if they are affected in this disease, we will also remark the formation on the eyelids and glandulæ meibomii of a thick mucus.

The eruption of the measles is preceded by a fever with symptoms of a catarrh. A dry and spasmodic cough, frequent sneezing, running of tears, and of sharp humour from the nose, are characteristic phenomena and deserve much attention.

In the period of the irritation, when the fever declares itself (stadium irritationis vel febrile,) it resembles the catarrhal fever; towards night there appear exacerbations, which augment progressively until the moment of the eruption of the measles.

We remark, at the same time, a violent cough, frequent sneezing, hoarseness, headache, especially above the eyelids, sensibility of the eyes to light, itching, pains, redness of the eye, and a sharp humour running from the eyes and nose.

During the epoch of the eruption (stadium eruptionis) if, after the third exacerbation of the fever the measles appear on the face, the breast, and the arms, and afterwards on the lower belly, the legs and the back, the face is always swoln,

and the eye is not of a bright but rather of a pale red, and in the malignant measles it is aqueous and unclean.

It is only when the measles are accompanied by a very strong inflammatory fever, that the eyes appear very red and sensible to light; notwithstanding this, the cough continues always, and in these serious cases the cough, fever, and the oppression of the breast augment progressively after the eruption.

The exanthem appears about three days after the eruption, and disappears very slowly. In this epoch (stadium florescentiæ) we see the colour of the exanthem change; it turns pale, yellow, or sometimes brown; the spots of the measles disappear, and the swelling of the face and eyelids diminishes; the eyes look dejected, they are more red, and the iris appears pressed down. In measles of a mild character, the cough and fever also cease very soon.

At the epoch of the desquamation (stadium desquamationis) the eye assumes its common aspect; however, we observe something tarnished in it, mixed with some brightness in the sclerotica; but the ophthalmia and the fever disappear entirely, and the crisis, that consists in an augmented perspiration, in urine more abundant with a sediment, or finally in a diarrhœa, brings back health.

In the anomalous measles, or in those which have a nervous or putrid character, we observe very dangerous symptoms. They are: the powers sud-

denly diminished, despondency, chills, insupportable headache, no sleep, and dyspnœa; the eye is red and brilliant, and cannot support the light; the pupil is more contracted; the pulse is irregular, small, and hard. The fever continues with violence after the eruption of the exanthem.

The measles eruption commences soon after the second or third day; it is abundant over the periphery of the skin, but the spots are pale over the surface, unequal, and mixed with other kinds of eruptions. It is soon after attended with cardialgia, with vomiting, with pneumonia or angina, with pain in the deglutition; and, if the disease makes progress, lethargia, convulsions, subsultus tendinum, and often, after the fifth or sixth day, death finishes the horrible sufferings of the patient.

In this pure nervous period, the eye is ferocious, inconstant, brilliant, but little inflamed, and more aqueous, the albuginea has a brilliant aspect: nevertheless, at different periods of the day we have found the patient so weak, that twenty-four hours in advance we could foretell with certainty a nervous apoplexy.

In forming the prognosis, we must take into consideration at the same time, the deranged condition of the urine, and the irregular, quick, and small pulse.

In the putrid measles we observe most of the symptoms which we have just described; they indicate great weakness in the patients, and an in-

clination to the decomposition and colliquation of the humours.

The measles itself presents a colour of reddish blue, and mixed with petechiæ and miliary eruption. The urine resembles brown beer, or white beer which is thick; the pulse is slow, trembling, frequent, and unequal: hemorrhages of the nose, lungs, anus or uterus; very fetid diarrhœa, accompanied with tenesmus, colliquatives, and sweats announce great danger, and often death.

In this kind of putrid measles the eye is inanimate, the albuginea dusty, often of a brown yellow colour, the iris is diminished, and the pupil dilated; the glandulæ meibomii are inflamed and in suppuration; in a word, the eye offers absolutely the same appearances we have described in the putrid fever.

Our readers can consult on this subject the writings of Rusch, Hoffmann, Wedekind, Fordyce, Franck, Horn, De Haen, Reil, J. P. Franck, Mezger, Richter, Vogel, Jahn, Henke, and Feiler.

The ancient and modern physicians have paid great attention to the different changes we observe in the eyes of persons attacked with worms. We purpose to avoid entering on a discussion on the formation of worms, and shall pass by in silence the writings of Goetz, Jordan, Brown, Hecker, Schaeffer, Rusch, Weikard, Jahn, and Henki; but we feel it our duty to recommend the ingenious ideas of the celebrated Blumenbach on this subject.*

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* Blumenbach's Naturgeschichte. Gottingen 1792, s. 411.

The most constant symptoms which announce the presence of worms in the intestinal canal are the following: The face is pale, there is frequent change of colour in it without any internal motive, a frequent itching of the nose, an abundant running of saliva, a disagreeable odour in the mouth, especially by children who are fasting, an inquiet sleep, a gnashing of the teeth during sleep; the pulse unequal, irregular, often intermittent; an abundant and aqueous urine, stools irregular, often diarrhœa, often constipation; the appetite deranged, sometimes excessive, sometimes diminished; thirst, the belly swollen, colics, an eruption around the mouth, itching of the anus, a frequent inclination by children to lie down on the abdomen, &c.

To establish a precise and perfect diagnosis we must observe the eye in conjunction with the other phenomena of the organization, especially when the moon is full and on the decline. Experience has sufficiently proved to us that at this epoch the symptoms of worms are more evident and decided.

In diseases from worms we remark particularly the dilatation of the pupil: the eye offers a more aqueous aspect, the albuginea a milky and dull appearance; we often observe a movement of oscillation in the eyelids, and the eyes are surrounded with blueish circles. We have observed the same appearance several times in a chronic ophthalmia, with other symptoms of worms. The change of the eye and the dilatation of the pupil in diseases

from worms, prove to us the affection of the sensibility in the vegetation of the organization.

It is not less important to consider the expression of the eye in the different periods of whooping cough. In the first period, the eye corresponds in appearance with that stage of catarrh; the eyes are dull, the albuginea is often of a rose colour, especially when the whooping cough has a pure inflammatory character, and when the general constitution is phlogistic, and the eyes are often inundated with tears. We remark a cough which does not fatigue much, sneezing, slight chills, horripilations, little heat, the sleep deranged, despondency.

This period exists during violent epidemics from three to four days, but ordinarily from eight to fifteen days.

In the period when whooping cough is formed, the face is swollen, red, and sometimes brown, the eyes are prominent, the little veins of the albuginea engorged with blood, the whole conjunctiva becomes sometimes as red as blood, the lips are swelled and blue, the paroxysms violent, almost occasioning suffocation.

We have seen hemorrhages from the nose, the mouth, the lungs, the ears: after the paroxysm a total intermission takes place; the cough is often accompanied with vomitings, when the contraction of the diaphragm is too strong or too violent, from a succession of spasmodic oscillations of the nerves of the diaphragm.

In the third period the disease begins to diminish. This diminution is distinguished especially when the cough loses its violence and convulsive nature. The danger of suffocation exists no longer, and we hear no more that peculiar sound which particularises this cough.

In this period, it is true, the aqueous aspect of the eye diminishes. The most characteristic symptoms, and those which exist during this whole period, are the blue circles around the eyes. This period often lasts several months unless the best succours of the art are afforded; and frequently ceases sooner by observing an exact regimen than by other remedies.

But if secondary affections of the whooping-cough supervene, local or general, the eye is dull, and deep in the orbit; the iris of a red brown; the albuginea dull and dusty, and the wrinkles of the eyes filled with mucus.

These phenomena are constant signs of danger in the secondary diseases of the whooping-cough, and ordinarily announce, according to our experience, the incurableness of the disease, and the proximity of death. (See further details in the writings of Rosenstein, Cullen, Hufeland, Schaeffer, Paldamus, and Marcus.)

In all chronic diseases of the vegetative system, which are the seat of the second polarity, the eyes have a suffering and depressed air, and the albuginea is more aqueous, and more or less covered with mucosities. The same occurs in suppurative phthisis.

suppuratives of the lungs, kidneys, and muscles of the loins, as also in phthisis of the intestines, of the uterus, and of the liver. Nevertheless, in this last phthisis, the eye is of a dusty or brown yellow, covered with mucus, and the iris of a brown red.

Expression of the eye in some diseases in which the sensibility, (or nervous system,) is particularly affected.

In hypochondriasis, where the digestion and the sensibility of the digestive system are affected, the eye is dull; it announces misanthropy and defiance, and the patients often complain of vertigo; they see objects double; they seem continually to see flies, or to have a mist before their eyes; they perceive sometimes a burning or a tingling in the ears. In one word, we can tell that the eye of a hypochondriac is a true mirror of the distress of his mind; of the melancholy, the sadness, the fear, the inquietude and despair, which beset, at different epochs, the existence of these unfortunate sufferers.

When the liver, the bile, and the system of the vena porta are affected at the same time, the albuginea is dusty, or of a saffron colour; but when the hypochondriasis is occasioned by material causes, such as obstructions, and accumulations of blood in the abdomen, the complexion of the patient is yellow and pale; the eye is inanimate; the albuginea tarnished with yellow, and deep blue circles are observed around the eyes.

In epilepsy, the eye presents a particular aspect: in idiopathic and symptomatic epilepsy, the countenance is inanimate; there is also a certain fixedness of expression. When this disease has continued for a considerable time, it affects the brain, and disturbs the intellectual faculties, and the eye has entirely the appearance of that of a simpleton, and is inanimate.

In those cases of epilepsy in which were found, after death, exostoses and other organic defects in the brain, arising from external violence on the head, the eye was always inanimate and suffused, and the pupil extraordinarily dilated. In pederastes, onanists, and tribades, when epilepsy is caused by this hideous vice, the eyes are dull, aqueous, and surrounded with blue circles. The same symptoms are observed in epilepsy occasioned by worms: but in this case, an attentive examination, and the actual presence of worms, conduct us to the true cause of the disease. At the time the blue circles appear, the pupil is dilated; and before the access of epilepsy appears, the eyes roll with fury in the head.

The wise Stoerck justly observes on this subject: "Admodum frequenter nihil omnino observant et "hilares perfectoque sanitate gaudere videntur; "subito vero oculos rotant, aut in facie pallescunt, "et multis præsentibus, nemine opinante, conci- "dunt, ut exinde non parvus adstantibus incutiatur "terror: nec pauca exstant exempla, ubi, excitato "tali terrore, præsentes antehac sanitate illibata

" prædiți eodem modo, difficulter admodum posthac
" curando, correpti fuere."

On the importance of examining the eyes and their expression, in medico-legal inquiries; and on the eyes of accused persons in criminal cases, and the expression manifested in their eyes and face.

We are now about to enter upon a subject which is of the greatest importance to the judge, the lawyer, the physician, and the philosopher. The author particularly wishes that it may attract the notice of the first two, and will feel himself flattered if it meet their approbation.

During my residence at Strasburg, in France, I was several times requested to be one of a jury in the court; and I have myself had occasion to observe with strict attention, the looks of the accused, during the interrogatories, and I have found in many cases that the state of their mind was exactly painted in their eyes. Falsehood was represented by uncertain and wandering looks; the internal conviction of guilt was portrayed in the eyes by timidity and dull looks, which changed to smiling, but deceptive expressions of the countenance, mingled with the torments of conscience. After having communicated our observations to the presiding judge, (juge instructeur) the result was confirmed by the guilt of the accused, whose subsequent confessions verified the indications of his countenance.

The celebrated Eshenmayer says:* "The conscience is an admirable faculty in man. It is a "secret tribunal, which has jurisdiction over our "individual selves only, and makes us responsible "for our actions, and even our thoughts. In committing bad actions, man is in fear of himself; "he is punished by repentance, and tortured with "remorse. The criminal who conceals himself, is "pursued day and night by his conscience: every "hour in the night the sound of the clock awakens "in him the recollection of his crime. Tranquillity "cannot return to his breast. It is in vain he "benumbs or intoxicates himself with joys and "pleasures: his awaking from them is terrible. It "is astonishing to see him affrighted at his own "image, when he beholds it in the mirror of his "conscience, disfigured by crimes and vices! Man "is really a double being; the criminal and judge; "culpable, and at the same time his own accuser. "What is more astonishing, is, that we ourselves "are premonished and cautioned of that which "is not praiseworthy in our sentiments and actions. "Psychology recognises this double being, and "admits the existence of conscience as a fact, and "places her in the first rank in the series of the "passions directed towards a celestial end. Conscience teaches us that which is true and just.

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* C. A. Eshenmayer, Psychologie, in drey Theilen, als empirische, reine, und angewandte. Bey J. C. Cotta. 1817.

" Conscience furnishes us with a certain guide for " our actions; her voice is heard in the most pro- " found recesses of our heart; it is in vain we at- " tempt to entrench ourselves behind sophisms and " refined subtilties—it is impossible for us to elude " the censure of her mysterious tribunal. Her pow- " er, superior to truth and justice, maintains her " authority over reason and volition. She sways " our thoughts and our actions; and reason, with " all her principles and all her logic, can do nothing " against this secret and elevated judge. Con- " science, in a moment, resolves all the doubts " which reason and prudence can offer."

These psychological reflections on conscience, made by the judicious Eshenmayer, are daily confirmed by experience. We cannot refuse to admit that the different movements of conscience and remorse are distinctly traced in the ocular expression, and painted in the looks of the face.

We have before mentioned that great part of the affections and sufferings of the mind are represented in the eyes, and produce corresponding changes in the looks. Can we refuse to admit, by analogy, that the alterations produced by conscience in our mind are retraced in the language of the eye? Conscience and its monitions can never acquire real value in psychology and medico-legal inquiry, unless we study with precision and sagacity the changes and the language of the eyes, which can alone conduct us with certainty to the knowledge of the inward strugglings of the conscience; it is

not sufficient that the physician should merely direct his attention superficially to apprise himself of the perturbed state of the mind; he must also attend to the extraordinary actions of the patient. The secret workings of the conscience must be determined and judged by the play of the features, the aspect of the eye, and the expression of the face. It is then only that psychology can attain the highest degree of scientific truth, when we begin to distinguish accurately the phenomena of the eye, and to compare them synthetically with the internal movements of the mind.

Conscience demonstrates to us truth and justice; but the knowledge and reality of this positive fact cannot be acquired but by objective representation. All the affections of the mind arise originally from facts and experience. How could we arrive at the result, were it not from the assertions, the actions, and especially the aspect and expressions of the face of a tormented being under remorse of conscience? As we cannot distinguish the expression of the masterpieces of a Titian, of a Correggio, of a Rubens, of an Albert Durer, and of a Vandyke, by their imitations or copies, nor by ideal constructions only; but we must have studied, or ourselves have often seen the finished productions of those great masters, before we can learn to distinguish their original genius, and to recognise it directly by the fineness and delicacy of their pencil, by the brilliant and admirable play of the colours, or by the expression of sentiments and passions: in

like manner psychology can only establish its basis by the different aspects of the face, the expression of the eyes, and other physical acts.

It is without doubt necessary in a science so difficult, that a judicious and prudent observer should unite experience to genius, firmness of character to philanthropy, and a religious spirit to an indefatigable activity.

Conscience exercises her empire over criminals decorated with purple, as well as over malefactors covered with rags.

Neither the principles of an artful and criminal politician, nor selfish eloquence, can stifle in the great of the world, the terrible voice of justice and truth.

Open the records of history, and you will be convinced of the truth of our assertion: you will find that an *avenging divinity* is manifested to *kings* by the voice of conscience. We communicate the following fact:

" Nero, occisa matre Agrippina per anicetem,
" nec sceleris conscientiam, quamquam et militum,
" et senatus populique gratulationibus confirmare-
" tur, aut statim, aut unquam ferre potuit: sæpe
" confessus exagitari se materna specie, ver-
" beribus furiarum ac telis ardentibus."—*Dion. in Nerone.*

The remorse of conscience traces, in the most striking manner, the impress of crimes in the eyes of assassins, and of the common criminal. The eyes of these are dull, and turn with fury in the

orbit; their crime is painted on their forehead, and the superior eyelids, and the eye itself. Remorse wrinkles their forehead, the eyelids nearly cover the eyes, which exhibit timidity, defiance, dullness, inquietude, trouble, and anxiety; sleep flies their eyelids, and despair unhinges the mind.

—" Invigilant animo, scelerisque patrati
" Supplicium exercent curæ, tunc plurima versat
" Pessimus in dubiis timor."'
Statii Thebaid. lib. iii.

It will perhaps be objected to us, that among persons familiarised with crime, and who make a sort of boast of excelling in it, the voice of conscience does not betray itself; that neither by their actions, nor their traits of countenance, nor by the expression of their eyes, can we perceive among these depraved men any trace of conscience.

But this objection is entirely destitute of foundation, and we reply that it suffices to proceed in psychology, with the design of being convinced of this incontestable axiom of Eshenmayer, that "*it* " *is impossible to remove the criminal from the tribu-* " *nal of his own breast.*" We would advise the examination and observation of such men with attention, and without their even suspecting it.— That sparing no exertions, we should speak to criminals at different hours of the day, especially in the evening, or when night spreads her dark and frightful veil, and even at midnight, and listen at the doors of their dungeons, and we would be

convinced that there are moments which exact groans and involuntary sighs from the most hardened and abandoned, and that they cannot succeed in stifling the voice of conscience.

After these arguments and reflections on conscience, you will observe how necessary it is, to pay more attention, and to attach more importance to the plastic alterations of the features of the face and expression of the eye in the researches of legal medicine, and even of opening of the bodies of persons poisoned or killed, than has heretofore been done.

This examination deserves particular attention, if we presume that the guilty person is in the house or in the room where it takes place.

Under this consideration, it is necessary that not only the officers of justice, but also an expert physician, examine with sagacity, but at the same time with much prudence, the conduct of the persons present. If they remark, whilst they proceed to examine the corpse, an individual who appears restless, whose looks are wandering and uncertain, who shows, sometimes an extraordinary activity, sometimes calmness, and then an affected sadness, there is much probability that this man is the guilty person, and we may say of him: "Hic ille "niger est," or "the eyes betray you."

However, it will be always prudent for the judge, physician, and psychologist to take into consideration,

1. The former state of the character or mind of the accused, for there are persons, for example, who during all their lives, have something fearful and anxious in their manners, and whose timid looks are always cast towards the ground.

2. If the individuals in question have constantly experienced an aversion and an extraordinary fear at the sight of a dead person, which happens often to many persons, who consequently will assist with more uneasiness at the opening of the corpse.

3. It is necessary to ascertain, whether before the accident they had a quiet and composed character, or if this disposition was only observed during the juridical examination.

4. We must scrupulously examine the whole moral and physical internal emotions of these individuals, and compare them with the particulars which we have just described.

The evidence thus furnished is not in truth in conformity with the rigid exactions of criminal law, but only probable, or uncertain, or collateral evidence. But has not experience often proved to us, that *conjectural* proofs have frequently led to *conviction ?*

The celebrated lawyer Feuerbach says:* " A

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* D. P. G. A. Feuerbach, Lehrbuch des gemeinen in Deutschland gultigen peinlichen Rechts. Funfte verbesserte auflage. Giessen 1812. S. 479. und 480.

" fact is *certain*, when we have obtained all the " motives of credibility, which, according to our " manner of seeing, constitute their reality.

" *Incertitude* has three degrees:

" 1. *Probability*—whether there are more motives " for, than against the truth of a fact.

" 2. *Doubt*—whether the motives for, or against, " are of equal value.

" 3. *Unlikelihood*—whether there are less mo- " tives for, than against them.

" The state of the mind in probability and doubt " constitutes *suspicion*, which we must never con- " found with *presumption*. We presume a thing " when we admit the possibility of its likelihood, " without even explaining the motives of our opi- " nion. Presumption is preceded by conjecture," &c.

We may consult on this subject: Thomas Noni d'Alteniensis, L. F. Puttmann, Weindler, Hanns Ernst von Globig, Pagano, and Feierlein.

We cannot refrain, after what has been stated, from again inviting the attention of the honourable judges, lawyers, physicians, and psychologists, to the eyes of the accused, and requesting them to consider attentively our ideas upon conscience, and the manner in which it is displayed in the eyes and face.

Description of the eyes, showing the difference between those of a woman and those of a man.

In woman sensibility generally predominates, and reason is subordinate to it; whilst, on the contrary, in man it is reason that predominates over sensibility, and strength is more expressed: therefore the eye in woman, especially when the mind is calm, shows sweetness of temper, mildness, and amiability, whilst in the eye of man reign firmness of character, resolution, seriousness and strength. But in agitation, or tempests of the soul, we perceive also the greatest expressive vivacity in the eye of woman.

When it is animated by anger, envy, or madness to domineer, neither the mind nor reason can soften it. In these circumstances it shows itself more unruly and more terrible than the eye of man, and the infernal furies seem to have established their residence in the eyes of women governed by these passions.

Without doubt, in these sorts of mimic expression of the eyes, temper, individual organization, the mode of life and education of the individual have a great influence, a circumstance which psychologists and physicians ought to observe with discretion in order to pay due regard to it.

On the effects of different poisons on the eyes.

We have explained that the intellectual faculties and the affections of the mind, in acting from the central organ of the nervous system, produce different effects upon the representation of the eyes; and we also have shown how the different motions of the soul and mind are to be seen in the eye.

To this representation, at once ideal and real, we must oppose a secondary one, determined by objects which influence the eyes either indirectly through the medium of the organization, especially on the sphere of the digestive organs, or indirectly belonging to the eye itself, and which produce alterations in its action, or in its appearance.

The first case comprehends the metamorphosis produced by a free and intuitive activity, and by a vitality influenced by the soul, while the changes in the second case are the effect of different objects of the physical sphere of the organization over the sensitive organs of the eyes, which are so entirely changed under these circumstances as to appear entirely different from the natural state.

We are now to consider the effects produced on the eyes by the poison of arsenic.

Of all mineral poisons, *arsenic* is the most violent in its effects. The most celebrated physicians

have carefully noticed the phenomena which we observe in the organization after taking different doses of arsenic.

It is especially in modern times that exact observations have been made on this subject. Without adverting to the ordinary symptoms which result from the poison of arsenic, we shall restrict ourselves to fixing the attention of physicians to the symptomatic changes of the expression of the eye, and of the secondary effects which arsenic produces, especially on this organ. An inexpressible fear and horror are painted in the eyes; they are shining and brilliant, and the looks are ferocious, timid and fearful; the eyes start from their orbits; the patient desponds, he does not see and does not attend to surrounding objects; the eyes are bathed with tears, and surrounded with a lead-coloured circle.

Baylis remarked the same, among the signs of poisoning by arsenic, that the sight was lost, to which supervened vertigo and syncope.

J. Schneider makes mention of a case of poisoning by arsenic in a man thirty-six years of age. His aspect was ferocious, his eyes started from their orbits, and appeared bathed in tears, and the tears were so acrid as to corrode the cheeks. After death itself, the effects of this horrible poison are manifested in the organ of the sight; and we must not neglect to take these effects into consideration with the other symptoms of the organization.

We have also found that the albuginea and the cornea of persons who have died from poisoning by arsenic, were absolutely similar to parchment which had been boiled and entered very slowly into putrefaction.

Other terrible effects and phenomena which arsenic produces in the organization, are described in the writings of Tr. Hoffmann, Ackermann, Berends, Pyl, Bosc, Gmelin, Gruner, Hahnemann, Isenflamm, Navier, Odier, J. Franck, Poldamus, Richter, Brodi, Orfila, &c.

The *acetate of lead* (*le plomb acidifie*,) not only attacks the vegetative and irritable sphere of the organization, but affects, at the same time, the reactions of the nervous activity; it therefore produces sadness, mental depression, vertigo, and an extraordinary despondency.

We have also found, says Professor Loebel, in the different labourers employed at a manufactory of white lead at Naumburg, (to which he was attached as physician,) the eyes disturbed and dull, the sight gradually weakened, the pupil irregularly dilated, gutta serena forming, and the patients terminating their miserable existence by attacks of apoplexy.

To these symptoms are often united trembling of the limbs, and violent pains and convulsions.—(See Sprengel, Burdach, and Grossi.)

Digitalis (*digitalis purpurea*,) taken in moderate doses, occasions a feeling of weight in the limbs, and a slight obscurity in the sight, with an

almost insensible dilatation of the pupil, a disagreeable sensation in the stomach, vertigo, trembling of the limbs, a diminution in the frequency of the pulse, and a pulsative pain in the fronts and bottom of the orbits.

Too strong doses produce convulsions, haggard looks, and dilatation of the pupil. The iris becomes of a brown red, excessive cold sweats supervene, and finally apoplexy and death.

In other respects, the accidents caused by digitalis are of long duration, and often reappear after having disappeared for a considerable time.

The effects of *opium* on the whole organization, and particularly on the functions of the eye, are different according to the quantity taken and the quality of the article, and the natural temperament of the individuals, for it acts differently on irritable and torpid subjects; its action is also different on persons of a sanguine and on those of a phlegmatic temperament.

According to our own observations, small doses of opium, such as an eighth or a quarter of a grain, taken every two hours, affect the sight agreeably. The eye becomes animated, the albuginea bright, and the look brilliant; the iris a little retracted—in a word, the countenance resembles that of a person frantic with joy.

On the contrary, when imprudent doses are administered, one grain for example, every two hours, it produces, it is true, momentary signs of gaiety, but very soon after we see its sad effects not only

displayed on the functions of the sensibility, but painted very visibly in the looks; the albuginea assumes a rose colour, and the eye and the countenance become dull.

After the administration of still larger doses, or a real poisoning by opium, the eye becomes ferocious, the looks are wandering, and the iris is of a brown red colour. The pupil is never dilated to the extent observed from the effects of other narcotics, but resembles that of persons attacked with nervous apoplexy.

On the contrary, the tinctura thebaica, or the liquid laudanum of Sydenham, has been for a considerable time, employed by us externally in diseases of the eyes and opacity of the cornea, connected with a slight inflammation in the albuginea and dilatation of the pupil, which had continued for a long time, without, however, injuring the functions of the sight.

Henbane (*hyosciamus niger*,) acts on the sensibility of the organization, depressing and stupifying it, and from thence extending its action to the lymphatic sphere; taken in large doses, it obscures vision.

W. Wedel, describes its action on the organ of sight in the following words: "Ocularum et faciei "rubor, pruritus et gingivarum, quem solia pere- "grina excitant;" and Avicennus says, in speaking of the hyosciamus: "Caligant oculi, spiritus diffi- "culter redditur, &c."

According to our own observations on the use of too large doses of the extract of hyosciamus niger, it produces yellowness of the visage, the eyes shine at first and then become dull, and the pupil considerably dilated.

The celebrated Himly has seen paralysis of the iris follow the use of it.

When the leaves of the fresh plant have been held over the eyes for some hours, the pupil becomes dilated, the iris immoveable, and the vision dull.—(See for the other effects of hyosciamus, the Monography of Stoerck; Libellus de hyosciamo, Viennæ, 1765; and the writings of J. Franck and De Greding.

Meadow anemone, (*L'anemone des pres*, *herba pulsatillæ nigrecantis; anemone pratensis.*) The principle of the anemone is chiefly characterized by its specific action on the nerve of the eyes, which is manifested by a cutting or lancinating pain in the eyes, and is of great virtue in the gutta serena.

Bergius relates an observation which was communicated to him by Ch. Sauer, relative to a young boy, who from the vapours which arose during the inspissation of the juice of this plant, had his eyelids red and lost his sight, but at the end of some days these symptoms disappeared.—(See Stoerck, Giese, and Murray.)

Professor Loebel has seen, after the use of the powder of the anemone, prescribed in large doses by a quack to a journeyman, fifty years of age and

very weak, horrible and lancinating headache follow, and especially pains in the eyes with obscure vision; the pupil was only a little dilated, but the iris was somewhat tremulous; flushes of heat predominated over the chills, and this unfortunate man was tormented by inexpressible anxieties, disgust, vertigo, and cardialgia.

These symptoms were accompanied with pains in the salivary glands, salivation, slimy and thin stools, and vomitings. The urine was bloody, with very strong pains in the bladder and urethra.

The peculiar effect which this substance exerts over the sensibility and lymphatic system, and its individual action over the parts of the eye, has induced several physicians to make use of it in certain species of amaurosis and cataract, and also in certain spots in the eyes.—But we will here end our reflections, it being our intention only to speak of the particular effects of this plant on the organ of sight.

Deadly nightshade, (*L'herbe et la racine de la belladone, atropa belladonna.*) This plant acts particularly on the nervous parts of the eye, over the whole sensibility, and from thence its effects are extended over the lymphatic system of the organization.

Administered in small doses it produces sparkling and flashes before the eyes, double vision, and fixed looks.

It is seldom that we do not observe a sensation of dryness and tension in the œsophagus, vertigo,

drowsiness, anxiety, and, after a few hours, a free and copious sweat.

In large doses it attacks violently the oscillation of the brain, which is disturbed in its reaction, from which result vertigo, temporary blindness, stupid insensibility, fury, spasms of the œsophagus and larynx, and convulsions.

The eye has a ferocious look, the albuginea appears a little dirty, the pupil considerably dilated; the dilatation continues till death, which is almost always ushered in by paralysis.

J. Franck relates the case of a boy three years of age, who had eaten freely of the berries of the belladonna, which he had mistaken for cherries.—His face, and the whole surface of his body became red; the pupil considerably dilated and entirely immoveable.

Daries cites a case in which the juice of berries of the belladonna injected in the eye produced in a short time blindness, while the leaves simply applied on the temples occasioned the dilatation of the pupil, and the immobility of the globe of the eye.

The extract of belladonna in doses of a scruple, dissolved in half an ounce of aqua distillata, has produced momentarily the dilatation of the pupil and immobility of the iris.—(See Paget, Himly, and Franck.)

Poison laurel, (*L'eau de laurier-cerise—aqua lauro cerasi.*) This substance acts in a deleterious manner, particularly on the sensibility of the sys-

tem. In large doses it produces convulsions, tetanus, and violent and irregular spasms. In some cases it produces vertigo, paralysis, and apoplexy. In still larger doses it kills directly.

This poison not only produces twitching pains in the brain and spinal marrow, but also in the eye. Under these circumstances we find this organ extremely dull, aqueous, and moving very slowly.

Compare with these remarks the writings of Doell, Ittner, Emmert and Hufeland, who have exceedingly well described the effects of the aqua lauro cerasi.

Nux vomica, (*La noix vomique*,) administered in large doses, acts in a deleterious manner on the whole nervous system. It acts in such a manner as to occasion vertigo, headache, delirium, watchfulness, and great anxiety, without the patient entirely losing his consciousness.

It attacks particularly every part of the eye.—The eyes are painful, and appear to start from their orbits; they are shining and sparkling, the albuginea is red and inflamed, the pupil extremely dilated, and we have frequently noticed a partial amaurosis to ensue.

This substance administered in small doses, very soon excites convulsions, stupor, and death in animals born blind equally with others.

Thorn-apple, (*La pomme epineuse—datura stramonium.*) Not only the leaves, but also the fruit and the seeds of this plant produce deleterious

effects on the system; it acts powerfully on the senses, and at the same time destroys sensibility in the vegetative organization.

This plant, especially the seeds, produces drunkenness, fury, enthusiasm, weakness in the organs of sense, and an insatiable desire of voluptuousness; the eyes squint frightfully, the pupil is greatly enlarged, the countenance alternates with fixed and ferocious looks; timidity and shame disappear, and a shameless feeling of lust torments those who have unfortunately used it to excess.—See Sauvage, Haller, Boerhaave, Gmelin, Stoerck, Wadeberg, J. Franck, Paget, and Orfila.

Gmelin, Abhandlung von den giftigen gewaechsen. Ulm, 1775.

Emmert, Diss. in med. præs. Kielmayer, de venenatis audi Barussici in animalia effectibus. Tubingæ, 1803.

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Emmert, in der medizinisch—chirurgischen zeitung, No. 61, vom. 2. August, 1813. S. 162—169.

Hufeland, Beobachtung der schnellen toedtlichen wirkung der Blausaeure, in Journal der practischen. Heilkunde. Jan. 1813. S. 85.

Orfila, Traite des poisons tires des regnes mineral, vegetal, et animal; ou Toxicologie generale,&c. Paris, chez Brochard, 1814.

Description of the eyes, before, during, and after critical periods.

Critical periods present to us three stages, which are manifested according to the degree of the disease, and the coincident influences, and these stages are not only indicated in the symptoms of the different organs, but the eyes especially present each of their different aspects; they indicate the epochs of the disease, and especially the critical moments.

It is necessary also to observe attentively the pulse, and other symptoms, with the view of regulating by these the precepts of therapeutics and dietetics.

In like manner, when before the developement of the crisis, in the forming state of disease, there exists in the organization a sort of chaos, an irregular monomachy; the same condition is depicted in the eye. During this time the eye is restless, and the patient casts ferocious looks around him.

At the moment of exacerbation the eye is red, inflamed, and shining, and a little before the crisis the ungovernable play of the countenance is carried to the highest pitch. We may there distinctly remark the contest of life with death. During the developement of the crisis, this wild play of the countenance ceases little by little, at least if life does not cease during the crisis. In this last case

the eye becomes unexpectedly calm and dull, the looks are fixed, and the iris, as it were, insensible. In the contrary case, it is very sensible to the light, which it dreads and avoids.

Boerhaave has described, in a masterly manner, this period of the crisis in the following words:

" Primaria illa symptomata critica, et signa sunt
" hæc, quæ crisin evacuantem præcedunt; post
" coctionem, tempore critico, subito, sine nova
" manifesta morbi causa, oriens stupor, somnolen-
" tia, sopor, vigiliæ, delirium, anxietas, dyspnœa,
" nox molesta, rigor, dolor, rubor, titillatio, punc-
" tura, gravitas, densitas in parte, tenebræ, splen-
" dor, lux, lacrimæ spontaneæ in oculis, nausea,
" æstus, sitis, retractio hypochondriorum, tremula
" agitatio labii inferioris."

When the developement of the crisis takes place in a happy and salutary manner, the harmony of the functions of the organization is quickly re-established, life regains its powers, and we remark the return of calmness and mildness in the eyes; the looks are agreeable—they have lost that wild and uncertain look that they had before.

We cannot better compare this change than to the sky which becomes suddenly clear and bright, after having been covered with dark clouds and storms; the ferocious winds are calmed to rest, and the sun smiling anew in the azure vault, restores peace, repose, and fertility to all nature.

After this critical revolution of the organization, convalescence follows, and to this succeeds a perfect cure, provided the developement of the crisis has been perfect and free from disturbance ; but should the crisis be interrupted, death frequently ensues.

We here finish our remarks on the semeiology of the eye, and we repeat, with the divine Lucretius :

" Multa tegit sacro involucra natura ; neque ullis
" Fas est scire quidem mortalibus omnia, multa
" Admirare modo, nec non venerare, neque illa
" Inquires quæ sunt arcanis proxima ; namque,
" In maribus quæ sunt, hæc nos vix scire putandum.
" Est procul a nobis adeo præsentia veri."

IMPORTANT MATERIALS FOR THE SEMEIOLOGY OF THE EYE.

*De oculorum affectibus.**

Oculorum nitor, eorumque alba ex nigris et lividis nitentia, salutare. Ergo si pura brevi redduntur, ea puritas citam crisin ostendit ; sin autem serius, tardiorem.

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* Hippocrat. Coac. Lib. II. Ed. Paris. 1811.

Oculorum caligatio, albumve rubens, aut livens, aut venis obsitum nigris, indecorum.

Sed prava quoque sunt hæc: lumen refugere, aut illacrymari, aut distorqueri, et alterutrum altero minorem fieri. Pravum est etiam, oculorum aciem crebro huc illuc volvere; aut eamdem lemis tenuique pellicula obstrui, album increscere, nigrum diminui, aut nigrum etiam sub palpebra superiore occultari.

Quin etiam prava sunt hæc: oculi concavi et foras multum exerti; tum sic perstricta oculorum acies ut potis non sit amplificari pupillam. Præterea extimarum palpebrarum curvatura, oculorum concretio, aut ipsos continenter nictare, colorem mutare, nec posse palpebras dormiendo committi, pestiferum. Mala est etiam oculorum perversio.

Oculorum rubra suffusio, febris experti, diuturnam ventris afflictionem denuntiat.

Quæ circum oculos assurgunt pustulæ, dum refectioni opera datur, alvum prorupturam ostendunt.

Si ad perversionem oculorum laborioso febricitanti rigor accesserit, perniciosum. Tum comatosi in his gravissimum habent malum. Lippienti viro, superveniente febre, lippitudinis exsolutio: sin minus, cœcitatis aut mortis, aut utriusque periculum est.

Quæ lippitudinem anteivit cephalalgia, aut insecuta firmiter, fixa hæret; periculum cœcitatis adfert.

Quæ lippienti sponte diarrhœa cietur, salubris. Oculorum hebetudo, concretio et caligatio, denuntiat grave malum.

Obscuratio oculorum cum exsolutione citam convulsionem ostendit.

Oculorum caligo in morbis acutis, citaque huc illuc conversio, turbulentus etiam somnus vigiliaque ipsa, nonnunquam vero at sanguinis substilla e naribus, convulsionis prænuntia. Qui ad contactum minime sunt æstuosi, evadunt phrenitici, magisque si sanguinem non profundant.

*De observatione oculorum in acutis.**

Nunquam ab ægro discedas in acutis et inflammatoriis nisi oculos inspexeris. Quando illos a naturali statu mutatos videbis, time semper, sicuti post opiatum in dysenteria, post chinæ in magno primarum viarum apparatu. Constricto in his casibus indebite humore noxio, præcipitat æger, et præcipitii signa oculi a naturali statu mutati ostendunt.

Si oculi robusti non sint, mors imminet. Hippoc. 2. Epid. sect. 6.

Oculi audaces et fixi delirium minantur. 6. Ep. sect. 1.

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* Georg. Baglivii Opera omnia medico-practica et anatomica.— Lib. I. p. 77. Norimb. 1751.

Si oculi lucem fugiant, aut involuntarie lacrymentur, aut distorqueantur, aut præternaturali colore mutentur: malum. Hippoc.

Si, oculis clausis, alba eorum portio appareat, quod non fiat ex alvi profluvio, aut delassatione: lethale. Hippoc.

Ut valent oculi, sic et homo. Hippoc.

Oculi, societas et vicinitatis jure, præ ceteris cerebri afflictionem denotant. Duretus.

Oculorum rubor, in febre natus, diuturnam ventris molestiam denotat. Hippo. Coac. 40.

Hallerius ait, oculorum ruborem esse signum corrupti pulmonis, aut viscerum—cerebri quoque et ventriculi inflammati; fol. 1092 et 1096.

Oculos caligare et obtenebrari, in pectoris acutis morbis, lethale, ut præ ceteris observavi in sene pulmoniaco apud S. Pantaleonem in montibus, in vico, qui ducit ad amphitheatrum Flavium, vulgo colosseum, et arcum triumphalem Constantini magni.

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*The sight.**

The eye, that true interpreter of the thoughts, the passions, the temperament, and the intellectual

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* Chr. Gottfr. Gruner's Physiologische und Pathologische Zeichenlehre zumgebrauch akademischer Varlesungen, und als Repertorium fur Praktiker. Jena, 1801.

faculties, conducts the observer at the same time to a knowledge of the actual state of the mind and the body.

The intimate connexion of the eye with the brain, the abdomen, the breast, and the other parts of the body, gives us the key to all that passes internally.

The natural vivacity of the eye, if it exists in severe diseases, is almost always a good sign; but if it is joined to bad symptoms, at the end of acute fevers, it becomes a suspicious sign. The healthy colour of the eye announces in persons in good health, the integrity of the functions and a perfect state of health; in sick persons, danger.

The preservation of the sight, or its alteration, either in general, or in one or the other part of the eye, furnish us a great number of different symptoms, more or less certain.

Aversion to light shows itself most ordinarily in inflammations of the eye, and indicates an exaltation of sensibility.

When it is accompanied by weakness, it denotes severe nervous symptoms.

When it exists with headache and ferocious looks, it announces an inflammation of the brain. In convalescence, it is a sign of weakness. In hysteria, in the gout, and other nervous diseases, it is of no moment.

The scintillation (marmarygæ) takes place in all diseases where the retina experiences an irritation, either local or sympathetic.

This symptom in persons in good health, and plethora following a congestion of blood, and in fevers, is without danger; but in affections of the head, it is a sign of inflammation in the brain. It is necessary to take this into consideration after weakness and evacuations, but it is of little consequence in spasmodic diseases.

It is the same in weakness (amblyopia,) and in obscurity of vision, (hebetudo visus, caligatio.)—These symptoms occur in weak persons and among gluttons and dyspeptics; in plethora, a congestion of blood in old persons, and those accustomed to vertigo or apoplexy; in hypochondriasis and hysteria, in nervous irritation, spasms, flatuosities and constipation; in epileptics, an approaching and severe accession; in an injury of the head, danger; in sedentary diseases, a nervous affection and augmentation of the weakness; in acute fevers, with tension of the abdomen, bleeding from the nose with restlessness, trembling of the lips and vomitings; in the *moribund*, progressive feebleness and death.

Therefore, if the vision of the patient is obscured by the appearance of darkness before his eyes, it is in acute fevers a sign of the dangerous prostration of the powers of the system, and this symptom, when fever does not prevail, is the ordinary precursor of gutta serena. The constrast between the looks and the features of the patient, for example—a most placid calmness with signs of

internal suffering—is suspicious, and is often produced by obstruction.

If the patient sees objects inverted, it is a symptom which announces, in violent fevers, great irritation of the optic nerves; after incomplete evacuations it indicates danger, and towards the termination of disease when united with prostration of strength, approaching death.

If the patient is under the impression that he sees a shining brightness, and if his looks are stern and wild, we may anticipate an alienation of mind; if it is a sparkling light, with a false redness of the face, and paleness of the mouth, with a bilious constitution, with a mist before the eyes, spasms and weakness.

The view of indeterminate and fantastic objects, such as insects, almost always supposes in persons in good health, a local defect in the organs of sight, weakness, and gutta serena; in hypochondriacs and hysterical persons, an approaching paroxysm. In fevers, it is a sign of congestion and weakness. A brightness similar to that of fire, with or without redness, announces sanguineous congestion, and in acute fevers, delirium, bleeding at the nose, or some other hemorrhage.

The view of double objects indicates, in intemperate persons, congestion, a pressure of the organ of sight, and an imminent apoplexy; in fevers, an idiopathic or symptomatic irritation and violent spasms; accompanied with prostration of the sys-

tem, it announces approaching death; and, when it appears without any other disease, a local defect of the eye: at least, the symptom is insignificant in hysterical and hypochondriacal patients.

Prominent eyes, with redness, lead us to presume an excessive congestion of blood, and makes us dread an apoplectic attack, or in cynancheal affections an approaching suffocation.

Prominent eyes, fixed, very moveable, or winking, denote in acute fevers a local or remote irritation, spasms, congestion of the head, an increase of heat and delirium towards night, in fine, imminent danger and death.

Haggard eyes, with the superior eyelid overhanging the inferior, and an uneasy aspect, lead us to presume, in bilious and malignant fevers, that there is an accumulation of fecal matters in the primæ viæ.

Haggard and immoveable eyes denote mania, tetanus, convulsions: dull, heavy eyes, feebleness, and in fevers, danger and diminution of the vital powers; in females, hysterical weakness. Looks turned towards the ground, announce in children hydrocephalus internus.

The eyes deep buried or hollow, are, in persons in good health, a sign of a melancholy temperament, of distress and exhaustion; among the voluptuous, of an excess in the pleasures of love; among others, we must presume weakening evacuations: in diseases, the violence of the disease; in conva-

lescence, the continuation of the weakness and the slow progress of the re-establishment.

Concentrated looks designate, in spasmodic diseases, a local irritation or a spasm of the muscles of the eye; in consumption, an augmentation of the disease.

The eye, drawn or contracted, announces spasms, or an excess of the pain of the convulsions.

The eye preternaturally enlarged, with redness, indicates an exterior violence or a congestion of blood; the eyes becoming diminished or lessened, denotes spasm or atrophy from a pressure of the nerves or a derangement of the brain.

The eyes glassy, in putrid fevers, announce danger: the eyes painful, without inflammation in fever, indicate irritation and danger.

Half closed eyes during sleep, indicate in children symptomatic irritation from accumulated fæces, acidity, flatulency, and worms; in hysteria, spasms without danger; in severe diseases, an augmentation of weakness and death.

The eyes firmly closed, in acute fevers, announce spasm with dangerous symptoms, diminution of the powers of the system, lethargy, and approaching death.

The eyes closed and winking, accompanied besides with favourable symptoms: a bleeding of the nose is critical.

The watery and glassy eye is peculiar to the

measles. All the symptoms of which we have spoken, are sometimes united in a severe and dangerous disease, and then indicate an entire cessation of the vital powers, and approaching death.

Strabismus, in insane persons, leads us to suspect an approaching attack; among females, nymphomania. A sudden strabismus of one eye, announces, in young infants, violent nervous symptoms, and fatal apoplexy. Strabismus and mobility of the eyes, hydrocephalus internus.

The change of colour furnishes also signs more or less certain.

A lead colour round the eyes, denotes in general weakness, cacochymy and cachexia, or obstructions in the bowels; in hysteria, spasms; those who yield themselves up to the habit of the detestable vice of onanism; libertines, debauchees, those subject to frequent pollutions or the gonorrhœa; in chronic diarrhœa, enfeebling the system; among females, the effect of the superabundance of the menstrual discharge, excess of venereal pleasures or pregnancy; in the plethoric, a hemorrhage: in the cachectic, a fluor albus.

The bluish tint in fevers, announces the progress of debility, and a fatal termination; the pale tint, feebleness; the whitish tint, cacochymy; the natural colour of the sclerotica in severe diseases, the preservation of the powers of the system.

If during sleep we see only the white of the

eye, we have reason to presume the increase of weakness and danger, especially in epilepsy in infants.

The redness of the eye denotes sanguineous congestion or stagnation, inflammation, metastasis of a morbific matter.

The redness of the conjunctiva in typhus, denotes a high degree of weakness; in bilious diseases an irritation caused by the bile, but without danger.

The yellow colour of the conjunctiva and albuginea is a symptom of jaundice.

If a sick person is attacked by a pain in the side, and the albuginea is of a dirty colour, it is dangerous. A black and brilliant cornea, accompanied with insensibility, indicates gutta serena; a permanent brightness of the cornea inspires hope in diseases, and the restoration of the powers of the system in convalescence; a cornea too brilliant, with ferocious looks, announces in fevers, violent delirium and fatal convulsions; in spasms, congestion, and the loss of recollection. The diminution of the brightness of the cornea is always a symptom of the diminution of the powers of the system, and indicates danger: the disturbed state and lessening of the eyes, with the silvery colour of the cornea, are ordinarily the precursors of death.

The eyelids also furnish different relative signs. The tumefaction of the eyelids indicates relaxation, cacochymy and cachexy; after evacuations,

weakness; in acute and malignant fevers, somnolency; in lethargy, approaching death; in the scarlatina, anasarca.

The lead colour of the eyelids, which supervenes suddenly, is a symptom of approaching weakness and danger, from the occurrence of internal gangrene.

The paleness and coldness of the eyelids in severe diseases, denote exhaustion; in hysteria, spasm; in cachectics, a superabundance of mucus.

The redness of the eyelids proves either a congestion or a stagnation of blood—a local or symptomatic irritation or inflammation. The eyelids half open; irritation and spasm of the elevator muscles of the eyelid; after large evacuations and in fevers, a feebleness and fretful delirium; towards the close of disease, convulsions and death.

The eyelids strongly closed and glued, denote much heat, delirium, weakness, and death. The eyelids shortened and reversed, accompanied or not with the preceding symptoms, announce in severe diseases danger, and towards the close, prostration of the vital forces and approaching death.

In persons in good health tears are ordinarily the expression of pain or sorrow. In choleric persons and spoiled children, a sign of impatience; in the melancholy, of trouble and chagrin; in sick persons, of irritation and sentiment; among persons of an irritable character and extreme sensibility, of the violence of the disease and imminence of danger, at least when a salutary bleeding from the

nose does not take place; in apoplectics they announce a new fit; towards the close of acute fevers, and when they flow involuntarily, approaching death. The diminution of tears in fevers, is the announcement of great heat, delirium, and phrenzy.

A purulent matter in the angle of the eye, denotes in infants a venereal affection; among adults, a suppressed gonorrhea; among aged and cacochymous women, the suppression of the menses.

Adhesive humours in the eye, announce feebleness and irritation; an acrid matter deposited on the glands, or an augmented or viscous secretion of the mucus of the eye, at the close of acute fevers, announce the progress of weakness, the prostration of the vital forces, and approaching death.

Finally, we come to the symptoms drawn from the pupil, with, or without those which we have detailed.

A cloudy spot behind the pupil indicates the white cataract. A dilated pupil, in severe diseases, indicates weakness, danger, and death; in putrid fevers, a metastasis on the brain; among infants, glassy stools, worms, and scrofula. The contraction of the pupil at the approach of light, announces a hydrocephalus internus; a pupil dilated and paralysed, the gutta serena; a pupil small and of a clear black, the sight good; a retracted pupil, worms or spasms; a pupil paralysed towards the close of severe diseases, announces approaching death.

We can consequently establish the following axioms: In proportion to the alarming symptoms which the eyes offer, accompanied by other symptoms equally unfavourable, the greater is the danger and the certainty of death; and vice versa.

Of the eyes and sight.

The alterations of the sight and of the eyes, and their deviations from the natural state, present very frequently to the physician, materials from which he may deduce all-important observations. The natural sight, in a state of health, is subject to various morbific changes; such as, for example, the double and multiplied sight, the fixed sight, the reverse sight, the obscure sight, the painful sight, the foresight, squinting, the appearance of fire, the sparkling sight, the appearance of various colours, of strange objects, of mist, of cloud, of imaginary and fantastic objects, aversion from or ardent desire for light. A considerable number of the morbific states of the body exert an influence over the sight. It is not only in the diseases of the eyes themselves and the brain, but also in those of the breast and abdominal viscera, that the alterations which occur in the organ of sight, furnish us with very important data in the diagnosis and prognosis of disease.

In examining the eyes, we notice its brightness, vivacity, gaiety—its movements, direction, and

position—its prominence or embedded state, its changes of colour, its mobility, the dimensions and size of the pupil, its dryness and heat, the different kind of humidity and impurities with which it is embued, its ferocious aspect, its winking, its spots, the state of the warts, tumours, excrescences, and a number of other accidents, which alone or variously combined, characterise and make known to us, either under the relation of prognosis or diagnosis, a great number of the diseases of the eye, as well as many other affections of the body, both general and particular. We read in the eyes a thousand important things, which cannot be known by any other symptoms. We remark there, frequently much better than in any other manner, the effect of words, the effects resulting from the action of medicine, and other circumstances operating on the patient.

The eyes announce frequently the movements of the soul, either past or present, such as chagrin, disgust, love, secret vices; the desires, fear, hope, watchfulness and its causes, are almost always easily to be distinguished there, which conducts the physician to the most important researches, and frequently enables him to distinguish that which is true from that which is false in the representations which are made to him of the patient. We should carefully distinguish the effects of affections of the abdominal viscera, of the womb, or the head on the eyes, from those which are produced by the affections of the soul, and com-

pare, in fine, the harmony of the looks with the features of the face.

The eyes of infants are a faithful mirror; the soul does not as yet express there any thing to deceive. When every thing seems lost, hope and consolation may yet beam in the eyes.

It is extremely rare for a sick person, under whatever unfavourable circumstances he may in other respects find himself, to be in danger of death, while his eyes preserve their serenity. Nevertheless, in the opposite case, this does not always necessarily occur, for we have frequently seen patients recover, in whose eyes fire and animation seemed entirely extinct.

When the eyelids are closed, we must not neglect, especially in diseases of the eyes, to open them at each visit, with the view of discovering their state. We must, besides, in cases of necessity, avail ourselves of all auxiliary means to satisfy ourselves perfectly of their condition—for example, a good view of the different positions and directions, of the different degrees of light, &c.

We can ascertain the sensibility and contractibility of the pupils by suddenly opening the eyelids after having kept them closed sometime, or by presenting before the eye a lighted candle, and then changing it suddenly.

Of the eyelids.

The eyelids also offer many things worthy of remark, as for example: change of colour, relaxation, tumefaction, ulceration, unequal closing, paralysis, dryness, inversion, spasms, convulsions, turning in of the eyelashes, which is frequently the cause of obstinate ophthalmia, the loss of the eyelashes, &c. We must also examine the interior part of the eyelashes.

Of the parts in the vicinity of the eyes.

These furnish us also with equally interesting observations according as they are more or less swelled, sunken, part blue, red, &c.

The lachrymal glands.

The quality, the colour, the tumefaction of these glands, the voluntary or involuntary secretion of the tears, their quantity and their quality, present to the observing physician different important circumstances, which cannot but be highly valuable in establishing the general principles of diagnosis.

The sight.

If, in acute fevers, the patient complains that he cannot see, it is a dangerous sign, and almost always mortal, when the other symptoms indicate a great prostration of strength. This symptom is not less unfavourable in apoplexy and epilepsy.

Among pregnant women blindness which supervenes suddenly, does not disappear ordinarily until after delivery; sometimes it also depends on the accumulation of fæces in the primæ viæ, and the presence of worms. The diminution and obscurity of sight, and a disturbed and imperfect vision in acute diseases, are alarming symptoms which indicate oppression or debility of the powers of the system, and if other symptoms present confirm this condition; if this state of vision succeeds to syncope or convulsions, apoplexia and death may be expected shortly to follow.

If the patient should not find the chamber sufficiently warm, it is a mortal sign, which we have also sometimes observed in puerperal fevers.

An obscure or dull sight, succeeding to wounds of the head, announces considerable action, or an extravasation in the brain, and consequently danger. Frequently also an obscurity of sight precedes a bleeding at the nose or a critical vomiting, and it proceeds frequently from accumulation in the primæ viæ, with fulness of the head. In hy-

pochondriacal and hysterical patients, this symptom indicates the approach of a new paroxysm more violent than the preceding.

If the patients complain of spots appearing to float before their eyes, we should apprehend in acute diseases delirium, and in persons in other respects in health, the cataract or gutta serena.

The appearance of sparks before the eyes proceeds from a considerable congestion of blood towards the head, and leads us to apprehend lethargy, apoplexy, convulsions, frenzy, and at critical periods, a bleeding from the nose; sometimes this symptom arises from the pressure of fæcal matters in the primæ viæ. If patients are under the delusion that they see objects which are not present, or objects which have no existence, it indicates danger, especially when accompanied by other alarming symptoms.

Double vision, (diplopia,) with a great prostration of strength in hectic and other fevers, ordinarily precedes death. Too great sensibility of the eyes, to the extent that they cannot support the light, is an alarming symptom in acute fevers.

In opthalmias, if the inflammation is not considerable externally, but the pain nevertheless very severe, and the eyes very sensible, it is a proof that the internal parts of the eye are affected, and that blindness is to be feared. A pain in the pupil, without inflammation, is a dangerous symptom in acute fevers.

Besides, it is also proper to remark, that at the approach of a crisis, as, for example, by perspiration, vomiting, diarrhœa, bleeding at the nose, &c. the eyes experience frequent changes, without any danger to be apprehended from this cause; on the contrary, it is frequently a sign of convalescence.

We must consequently in these cases have regard to the period of the disease, to preliminary symptoms, and other circumstances. When the pupil is largely dilated, without, however, the sight suffering from it, it indicates almost always a feeble constitution, and is also a sign of worms, and of fæcal and others matters in the primæ viæ, but we should always, at the same time, have regard to other symptoms in the disease.

In hydrocephalus internus, the pupil is ordinarily very dilated; it contracts when the eye is exposed to a bright glare of light, but it finally regains its primary dimensions in the same degree of light.

In acute diseases, a considerable dilatation of the pupil is a dangerous symptom, and indicates a torpor of the brain. We remark this symptom in syncope, in the use of immoderate quantities of opium, in lethargies, and in the placid delirium which accompanies malignant fevers.

A dilated pupil which does not contract at the approach of light, must be ranked among the symptoms of gutta serena.

A small pupil indicates a proper degree of irritability, and consequently a good sight.

In consequence of the presence of ascarides in the rectum, the pupil is frequently very contracted, and it regains its ordinary dimensions when the worms have been removed.

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