

this subject is now attracting widespread attention in the profession. It is, however, safe to assume, that so long as a surgical operation to secure union of the fragments is not unattended with danger, excepting under antiseptic precautions, the details of which render its employment impossible for ninety-five practitioners out of a hundred, especially those residing in the country, the *mechanical treatment* being devoid of danger, and productive of a fairly good result with but little comparative inconvenience, will interest and continue to be employed by far the greater majority of the profession.

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### METHYL-VIOLET.

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A few months ago Dr. J. Stilling, of Strasbourg gave to the world in the *Revue Generale d'Ophthalmologie* his experience in the use of methyl-violet in the treatment of various affections, more especially those of the eye. When the article first appeared, May, 1890, I took the liberty of translating it, and subsequently my translation was published in two numbers, (non-consecutive) of Dr. Lanphear's *Kansas City Medical Journal*. I commenced the use of methyl-violet from the day I first read Prof. Stilling's article, for at that time I had on hand a case of suppurative iritis which had resisted all treatment, continuing step by step through the several stages of inflammation until panophthalmitis seemed inevitable.

The patient was an old man, 72 years of age, rather feeble physique, upon whom I had made extraction of a nuclear cataract some eight weeks previous to the attack of iritis. He had made a good recovery from the operation and with fair results, viz., with plus 11 D.  $\frac{2}{3}$ . Could read No. 2 with + 14 D. There was a slight amount of cortical substance remaining. The iritis did not ensue for a month after he had gone from the hospital, when it appeared quite suddenly one day as he was sitting in the harvest field watching the harvesters at work. He says that as he crossed the lot from one shade tree to another, in the full blaze of the bright August sun, he felt a sharp pain dart through the eyes, and from that time he was not fully free from pain, which gradually increased with intolerance of light and diminution of vision. It was several days after the attack before the patient returned to the city. When he presented himself I found an intense inflammation of the iris with plastic exudation in the front chambers.

Mydriatics and hot water were scrupulously used in connection with other antiphlogistics, but all to no purpose, the inflammation mounted higher and higher, and the exudation was more profuse and of a suppurative character; the iris becoming a deeper red until finally the whole chamber became blood red; the cornea began to grow steamy, there was intense ciliary injection; in fact the whole ball was aglow, and the lids swollen. There was much pain and total blindness. I despaired of any chance of saving the ball, much less any sight.

It was at this stage that I read Dr. Stilling's article on methyl-violet. I immediately had a preparation made, 1 to 1,000, which I had dropped into the eye, one or two drops at a time, thrice a day. This caused no irritation, but for a few hours there was little, if any, amelioration of the inflammation, although the eye felt better. At the end of the second day there was perceptible abatement of congestion, and the pain was nearly gone. The amount of medicine was increased. The conjunctival sac was filled at each application, morning, noon and night, and the inflammation gradually subsided.

The methyl-violet was continued for about three weeks, when the eyeball had become clear and free from inflammation. The shape and size of the ball had been perfectly conserved, the iris had assumed its natural color and brilliancy, although the pupil was nearly occluded and there was only perception of sight. The patient returned to his home in Kansas with the hope, through the means of a subsequent operation (to be made in few months) of regaining useful vision.

It has been about six or seven months since I commenced the use of methyl-violet in affection of the eye. I have used it a great many times, and in many patients, and have kept a carefu

<sup>17</sup> Berlin, 1796.

<sup>18</sup> Kohler, Anleitung Zum Verbande. Leipzig, 1796, p. 361.

<sup>19</sup> Journal der ausländischen Literatur von Hufeland. Schreger und Harlefs. Julius, 1802, p. 65.

<sup>20</sup> Vorlesungen über die Krankheiten der Knochen, Book 1, pp. 229-231.

<sup>21</sup> Siebold's Chiron., Bd. iii, p. 64.

<sup>22</sup> Richter, Berlin, 1828, p. 411, (also Manuele di chirurgia, Milan, 1812.)

<sup>23</sup> A System of Operative Surgery, London, 1807 and 1809.

<sup>24</sup> Richter (Aug. G.). Chirurgische Bibliothek, Göttingen, 1772-1796.

<sup>25</sup> F. A. Ammon, Parallele der Französischen und Deutschen Chirurgie. Leipzig, 1823, p. 152.

<sup>26</sup> Richter, Berlin, 1828, p. 413, Theoretisch praktisches Handbuch der Lehre von den Bruch und Verrenkungen der Knochen. (Also Journal für Chirurgie, Bd. iii, p. 330.)

<sup>27</sup> London Medical Repository, June, 1825, p. 442.

<sup>28</sup> Philadelphia Medical Reporter, vol. ix, April, 1826, p. 279.

<sup>29</sup> De Fractura Patellæ; Diss. inaug. Berol. 1827, p. 29.

<sup>30</sup> Alcock. Practical Observations on Fractures of the Patellæ and of the Olecranon, London, 1823, p. 8.

<sup>31</sup> Ortalli. De Fractura Patellæ. Berolini, 1827, p. 52.

<sup>32</sup> Arsenal de la Chirurgie Contemporaine, par G. Gaugot and E. Spillmann, Paris, 1867, p. 246.

<sup>33</sup> Druiitt. The Surgeon's Vade Mecum. London, 1865, p. 285.

<sup>34</sup> Holmes. A System of Surgery. London, 1864, p. 624.

<sup>35</sup> Bulletin de Thérapeutique, 1855, Vol. ii, No. 48, p. 270.

<sup>36</sup> Malgaigne "Traité des Fractures et des Luxations." Paris, 1847, t. i, p. 771.

<sup>37</sup> A. Bonnet, Revue Med. Chirurgicale, 1851, t. x, p. 339.

<sup>38</sup> A. Cooper, San Francisco Medical Press, 1861, p. 517, et Gaz. Hebdomadaire.

<sup>39</sup> Trélat Bulletin de Thérapeutique, 1862, t. 63, p. 447.

<sup>40</sup> Wales, Mechanical Therapeutics, p. 472.

<sup>41</sup> Wales, Mechanical Therapeutics, Philadelphia, 1867, p. 472.

<sup>42</sup> Mechanical Therapeutics, Philip S. Wales, M.D., Surgeon, U. S. N., Philadelphia, 1867.

<sup>43</sup> Erichsen's Surgery, 1872, p. 380, Vol. i.

record of several of the cases. It has been mostly used in phlyctenular conjunctivitis and granular conjunctivitis.

In cases of trachoma, when treatment cannot be continued by me on account of patients being obliged to return to their homes, out of the city, it has become my custom to prescribe a bottle of methyl-violet (1 to 1,000) to be used at home three times daily, and it has been invariably the case that these patients go on to recovery without any relapses, and that the medicine never acts as an irritant, but is always soothing and agreeable. I have used it with excellent effect in dacryocystitis by means of the lachrymal syringe. I have also used it in otitis media purulenta but not with as marked benefit as in affections of the eye, lachrymal apparatus, and nasal catarrh.

I have employed this agent in microscopy as a staining material, knowing its special and thorough action as a stain for different forms of microbes, and especially for the micrococci, and that it always means death to the bacillus when it comes in contact with him; striking, as it were, to the heart or nucleus of all cells; paralyzing all vital action at once; but it had not occurred to me to employ it as a therapeutic agent even in those diseases which are generally conceded to have their etiology in the microbes, until my attention was called to it by Prof. Stilling's able article to which I have referred.

Since I have been using this agent I have not had the opportunity of employing it in a single case of gonorrhœal ophthalmia. As yet, of course, the remedy has not been sufficiently used to establish it as so valuable a remedy as Dr. Stilling would claim for it.

Methyl-violet may be used as a local, topical and general systemic agent, in fluid or pomade, spray  $\frac{1}{2}$  to 1 per cent. It remains to be seen if it shall prove a valuable remedy in pulmonary affection, in pyæmia, etc. If it has a special predilection for the bacillus and cocci, we shall look for it as a boon in most diseases.

Within the last few days I have had occasion to use the methyl-violet in two cases, one of iridocyclitis and the other choroido-clyclo-iritis, both of a most serious nature; that of irido-cyclitis occurred in a reverend gentleman, Mr. D., age 55, blue eyes. This patient consulted me December 9, complaining of quite a severe pain in the right eye, with dimness of vision. Examination revealed acute inflammation of the iris with intense deep red congestion of the sub-conjunctival vessels over the entire anterior scleral surface. The pupil was contracted and inactive, and would not respond in the least to mydriatics. A 1 per cent. solution of sulphate of atropia dropped into the eye five or six times a day made no impression whatever, not even controlling in the least photophobia or congestion; in fact all the symptoms grew steadily worse, and on the third day the cornea lost its

transparency, became steamy, so that the iris was nearly hidden and the vision was gone; could not see to count fingers, and the fellow-eye had taken on symptoms of irritation, and its vision was considerably reduced. At this period, December 11, I ordered methyl-violet,  $\frac{1}{10}$  per cent., dropped in the eye every hour, in connection with the sulphate of atropia, and to my great delight the next day, December 12, I found the pupil dilated to more than twice its size of the day before, the congestion subsiding, the cornea clearer, and the vision sufficient to count fingers. The treatment was continued, and on the following day the patient was able to recognize a person across the room, pain was gone, redness less and pupil widely dilated. December 15, pupil wide open and vision  $\frac{2}{3}$ , eye fast recovering.

The methyl-violet has quite a mydriatic effect and also controls the power of accommodation to a considerable extent; though it is claimed by some that it does not affect the power of accommodation. This fact I have verified many times, by using it alone without atropia. In the above case I feel confident that the methyl-violet, from its diffusibility and germicidal effect on the pyogenic microbe, cut short the disease and so saved the eye.

I do not believe that in this case the mydriatic effect of the atropia could have obtained without the methyl violet; besides, the methyl violet controlled the irritating effect of the atropia on the cornea, and checked the keratitis.

The other case, choroido-cyclitis, occurred in a young man of 25 years, dark brown eyes, A. B. Patterson, from Juniata, Neb., a station agent on the Missouri Pacific railroad. The history, as gained from the patient, was as follows: While walking down the street October 13, with a pen-knife open in my hand, I met a friend, who in play knocked my hand with the knife so that the open blade pierced my right cheek, going into the eye, and then the doctor put a stitch in the eyeball and assured me that the sight would be all right (a German doctor). For about ten days the sight was very good, and then the eye began to pain and I could not bear the light, and the sight gradually diminished and the pain grew worse. An examination revealed a scar of the right cheek, lower lid and eyeball; that of the eyeball about 10 mm. long, about one-third of which extended into the cornea from the inner inferior region, near the attachment of the inferior rectus muscle. The cut of the cornea embraced the entire layers of the cornea, and evidently the blade went through the sclera and choroidal, though there was no evidence of its cutting the iris. The pupil was contracted, and the vision was not sufficient to count fingers, and photophobia intense. I ordered a 1 per cent. solution of atropia to be dropped into the eye every two hours, night and day. The second day the patient was sent to my

rooms; the mydriatic had not had the least effect. The ophthalmoscope revealed a grayish, light-colored body, with small, pale blood-vessels mounting up over it, projecting from the region of the ciliary body, and the sclera immediately exterior was swollen or bulged. There was evidently detached retina, with exudation beneath the retina. At this date I commenced the use of methyl violet, and had it dropped into the eye every hour, night and day. On the following day there was some dilation of the pupil, and less pain and soreness. December 16 I injected a 10 per cent. solution, 10 m., in the eye through the sclera, by means of the hypodermic syringe. The soreness has subsided and the pupil is more open, although the exudations are much the same.

Dr. Stilling speaks of injecting the vitreous of a rabbit without harm to the eye. My experience so far has been that the good effect from this agent is especially to be realized in inflammation of the deeper structures of the eyeball, owing probably to the great diffusibility and penetrability of the aniline, traversing almost immediately the cornea and sclera to the chambers of the eyeball, and having for its predilection the bacillus and micrococci. In ulceration of the cornea I have used it with most excellent results in the form of pomade, 1 to 200. For marginal blepharitis, or tinea tarsi, the methyl violet pomade,  $\frac{1}{2}$  per cent., carefully worked into the roots of the lashes by means of a spatula, works a speedy cure. Prof. Stilling, from his bacteriological experiments, found that milk mixed with methyl violet would not sour, nor would butter become rancid; that urine even could remain in a thermostat at 32° C. for a week without putrefaction, or presenting any bacteria whatever. In fact, any substance containing a solution of methyl violet of even 1 to 32,000, is absolutely indemnified. This agent acts as an antiseptic, killing the pyogenic bacteria, and from its diffusibility and non-destructiveness to tissues, it is superior to the other known antiseptics, and especially to thermo-cautery, which is so efficient a germicide, but can only be used at limited points.

In conclusion I would say that it is most important that the drug (methyl violet) be chemically pure, and free from arsenic. The article I have used I obtained from H. W. Evans & Bro., proprietors of the Diamond Drug Store, 908 Main St., Kansas City, Mo. An analysis made by our City Chemist, Dr. R. R. Hunter, and also by Dr. Claud C. Hamilton, Demonstrator of Chemistry at University Med. Col., shows no trace of arsenic.

THE WOMAN'S COMMITTEE OF THE WORLD'S CONGRESS AUXILIARY ON PHYSICIANS.—DR. Sarah H. Stephenson, Ch'n; Drs. Julia H. Smith, Mary H. Thompson, Mary Mixer, Fannie Dickinson, Elizabeth Chapin, Sarah H. Brayton, Julia Low, W. P. MacCracken, Harriet Heyl Carey, Rachel Hickey, all of Chicago.

## MEDICAL PROGRESS.

### Therapeutics and Pharmacology.

THE CURABILITY OF CANCEROUS TUMORS BY INJECTIONS OF BICHLORIDE OF MERCURY.—According to the Paris correspondent of the *Medical Press and Circular* for September 17, 1890, PROFESSOR POUCEL, surgeon to the Marseilles Hospital, suggested, in 1884, that, in order to explain the production of cancer, it would be found at no distant date that the microbe of cancer would be discovered by the microscope. Since then efforts were made to prove the parasitic origin of the disease, and some pretended to have discovered the new microbe, but soon afterward the pathogenic value of the bacilli, and it was even said that the microorganism was not necessary to explain the clinical phenomena of cancer. Assuredly the transport of living cancerous cells by the veins, and above all by the lymphatics, would produce homologous tumors, wherever these cells could find favorable conditions for germination. This mechanism, although explaining the generalization of the tumor, does not clear up the cause. The bacilli of cancer, as in the case of tubercles, exact certain conditions which are transmissible in an hereditary sense, and which constitute the predisposition and the tendency. When these exist, the rapid growth of these microorganisms becomes possible, and through their contact the epithelium becomes inflamed, proliferous and deformed, characterizing cancer. It was with this idea that he undertook a series of researches at the hospital of Marseilles. He had shortly before obtained a prompt cure of a malign pustule of a very bad form by injections of corrosive sublimate around its base, and these injections proved to him, first, that the bichloride had no ill effect on the tissues; and secondly, that it was efficacious against microbes absorbed through the lymphatics. It appeared to him, then, that it was quite rational to apply this treatment to cancer, or at least to tumors of a cancerous aspect of which the microbe (if there be one) is transmitted by the same means. Seven patients have already been submitted to this treatment, of whom the details are here given. The first was a woman without any syphilitic antecedents, whom he had treated for a long time with iodide of potassium. In the month of February, 1890, she entered the hospital for an ulcerated cancer of the right breast, which commenced ten months previously. The tumor was hard, uneven, and occupied all the mammary glands. The nipple was retracted, and the ulceration occupied the under part, giving exit to a fetid and abundant discharge. The axillary glands were as yet untouched, the tumor was free, and the general condition of the patient good. On the same day of her entry six injections (the half of an ordinary subcutaneous syringe