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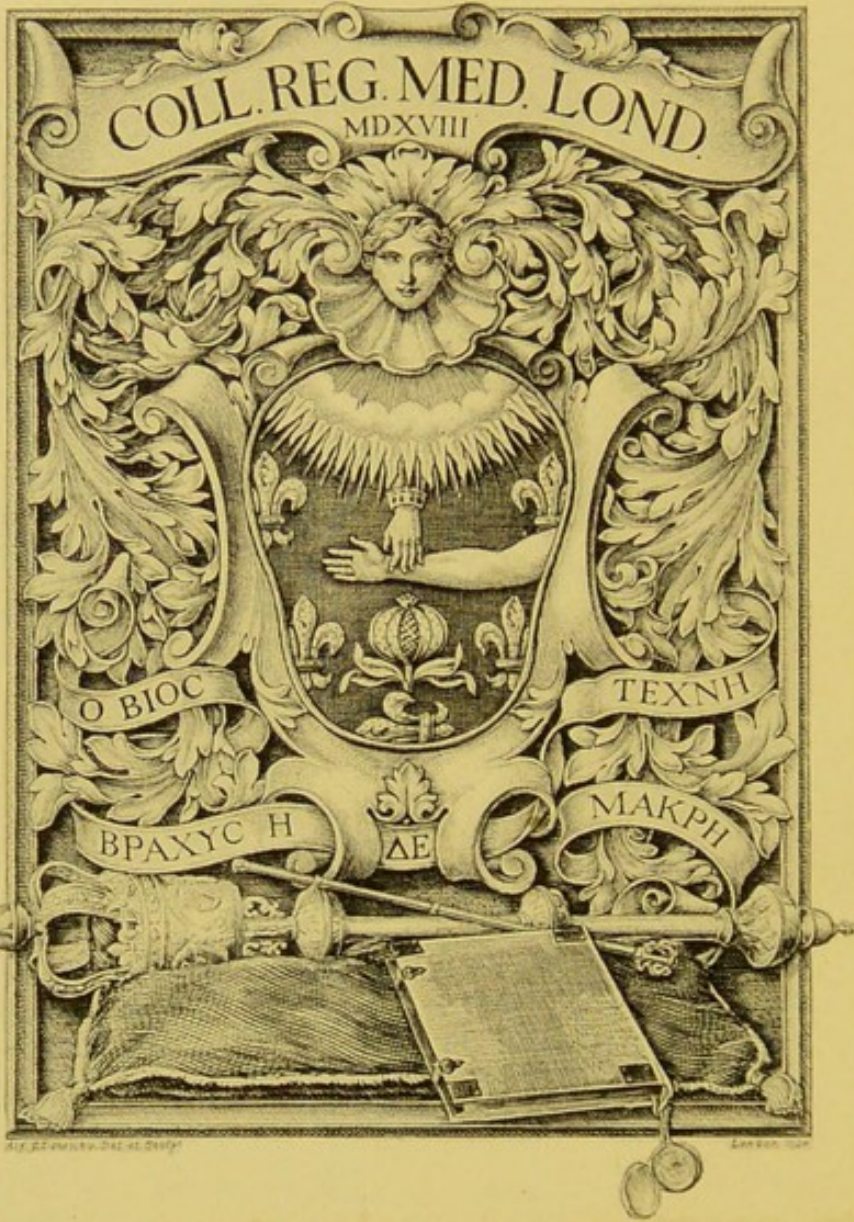
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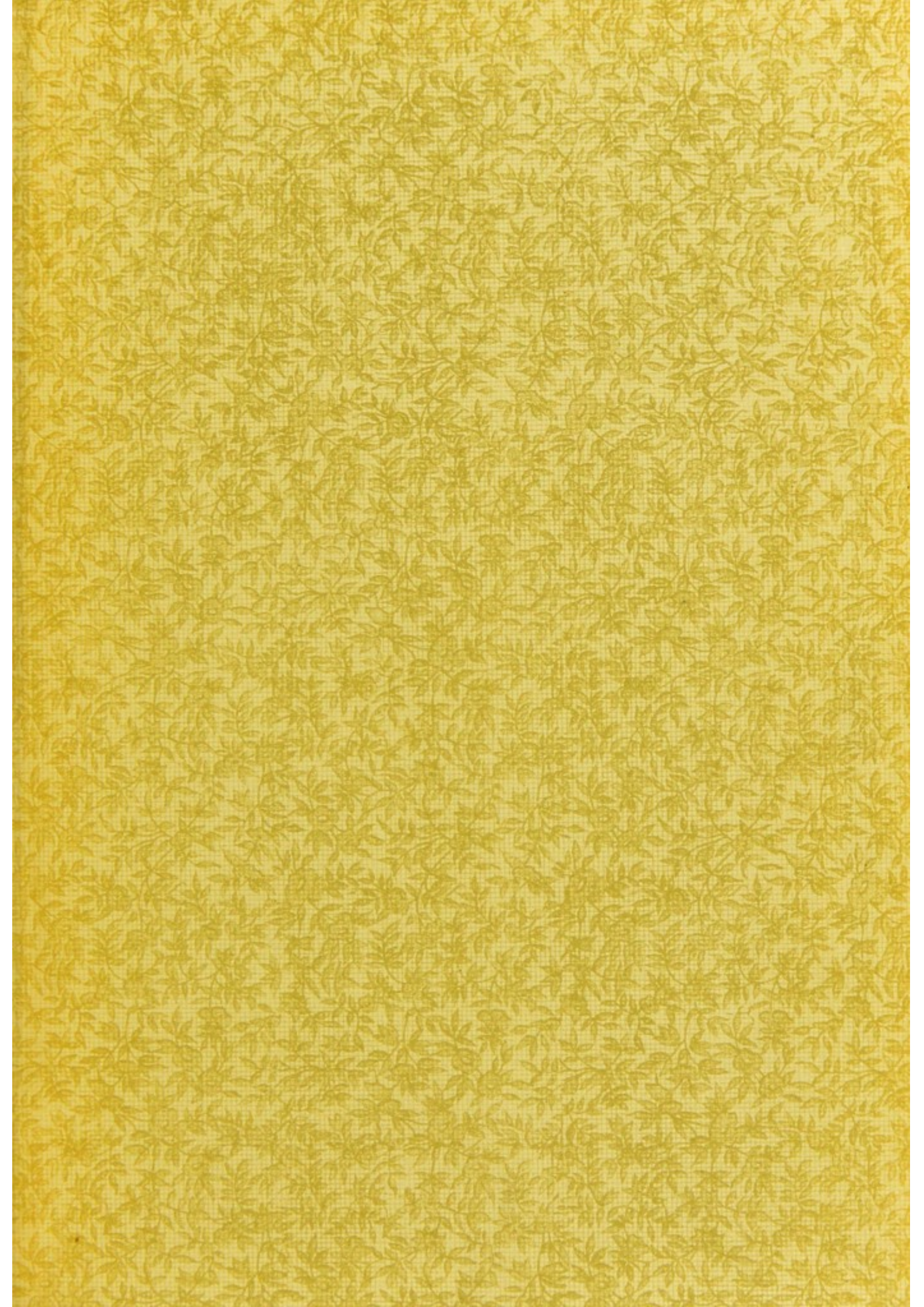
Literary Work of

S. Weir Mitchell.

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A CATALOGUE
OF THE
SCIENTIFIC AND LITERARY WORK
OF
S. WEIR MITCHELL.

- 1850. M.D., Jefferson Medical College, Philadelphia.
- 1853. Member of the Academy of the Natural Sciences, Philadelphia.
- 1856. Fellow of the Philadelphia College of Physicians.
Physician to the Southern Dispensary, Philadelphia.
- 1858. Physician to St. Joseph's Hospital.
- 1860. Hon. Member of the British Medical Association.
- 1861. Physician to the Institution for the Blind.
Hon. Member of the Boston Natural History Society.
- 1862. Member of the American Philosophical Society.
- 1863. Acting Assistant Surgeon, U. S. A.—Sanitary Inspector, U. S. A.
- 1865. Hon. Member American Academy of Arts and Sciences, Boston.
Member of the National Academy of Sciences, U. S. A.
- 1867. Hon. Member St. Andrew's Graduates Association, Scotland.
- 1868. President of the Pathological Society of Philadelphia.
- 1871. Foreign Associate Royal Medical Society of Norway.
- 1872. Physician to Presbyterian Hospital.
Physician to Orthopædic Hospital and Infirmary for Nervous Diseases.
Hon. Member Société Académique de la Loire Inférieure.
- 1874. Hon. Member of the Clinical Society of London.
- 1877. Hon. Member of the State Medical Societies of New York and New Jersey.
Hon. Member of the London Medical Society.
- 1884. Consulting Physician to the Philadelphia Hospital, Department for the Insane.
- 1886. LL.D., Harvard.
President of the Philadelphia College of Physicians.
President of the American Association of Physicians and Pathologists.
- 1888. M.D., Hon. causa, University of Bologna.
Hon. Associate Royal Academy of Medicine of Rome.
- 1889. Corresponding Associate des Vereins für innere Medicin, Berlin.
Hon. Member of the Clinical Society of London.
- 1891. President of the Congress of American Physicians and Surgeons.
- 1894. Consulting Physician to the Hospital for Children of Feeble Mind at Elwyn.



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P R E F A C E .

THE following list of my books and essays, whether medical or literary, represents as to the former the work, and as to the latter the play, of the years between 1851 and 1894.

Some of the scientific essays here briefly analyzed were of small importance. Some, I venture to say; record results still valuable either as discoveries in the domain of toxicology or as contributions to practical medicine. Among the latter are certain additions to methodical therapeutics, which I am glad to think have been of service to mankind and have been universally accepted by physicians.

The catalogue of literary work appended does not contain the titles of numerous magazine articles. It includes, however, a full list of all my novels, essays, and poems. These works may serve at least to show that it is possible for a man weighted with the gravest

interests of scientific medicine to employ his imagination. Also, it may help to prove that with us, at least, the great public is indulgent when satisfied that such use of leisure has in no way lessened a man's practical usefulness.

S. WEIR MITCHELL.

PHILADELPHIA,
1524 Walnut Street.

ANALYTICAL CATALOGUE.

1852.

No. 1. On the various forms of uric acid crystals and on their alterations in highly acid urine; also on the means of making large crystals of oxalates by interposition of membranes between the fluids used to form these salts.—*American Journal of the Medical Sciences*, N. S., vol. xxiv., page 121.

1854.

No. 2. Relations of the pulse to fixed states of deep inspiration or expiration. Too mechanical a view of the causation is given, and the observation of the phenomena had already been made a few months before by Weber; nevertheless, the essay has its use as a record of facts.—*Ibid.*, N. S., vol. xxvii., page 387.

1856.

No. 3. A remarkable case of deep and long-protracted sleep.—*Transactions of the College of Physicians of Philadelphia*, N. S., vol. iii., page 37.

1858.

No. 4. Bibliography of American papers on physiology.—*North American Medico-Chirurgical Review*, vol. ii., page 105.

No. 5. Blood crystals of the sturgeon—*Accispenser brevirostrum*; with colored plates. Oxidation of the coloring matter of the crystals. These magnificent microscopic objects may be as large as one-eighth to one-twelfth inch in diameter.—*Proceedings of the Academy of Natural Sciences*, Biological department, page 3, April, vol. x.

No. 6. Muscular phenomena following a blow on muscle from a percussion hammer. A laboratory examination of the long, primary contraction and the secondary, local, or "*hump* reaction," as it has since been called in a later paper of Drs. Mitchell and Lewis. (See Nos. 85, 86, 94.)—*Ibid.*, page 2, March, 1858.

No. 7. On the inhalation of cinchonia and its salts. An attempt to show that this alkaloid can be taken into the blood when heated to volatilization, and is then discoverable in the urine. A paper of small importance.—*Ibid.*, page 21, Nov., 1858.

1859.

No. 8. Notes on the effects of alcohol, glycerin, water, gum, ammonia, and the vacuum upon the exposed hearts of frogs, turtles, sturgeons, etc.

A somewhat crude essay, but interesting as to the vitality of the sturgeon's heart, which, as Prof. John K. Mitchell showed, may, when removed, inflated with air and hung up, beat for eighty hours.—*American Journal of the Medical Sciences*, N. S., vol. xxxvii., page 343.

No. 9. Corroval and Vao. An experimental study of two new poisons from the Rio Darien; by William A. Hammond, M.D., and S. Weir Mitchell, M.D. Showing these to be powerful cardiac poisons, and to act on the heart muscles; also showing that the popular belief as to these wooraras, so called, being made active by venom is unfounded. This research should be repeated and an effort made to procure more of these poisons, which are entirely unlike woorara and of much interest.—*Ibid.*, N. S., vol. xxxviii., page 13.

No. 10. An experimental study of the toxicological effects of sassy bark, an ordeal poison from the Liberian coast, West Africa; by S. Weir Mitchell, M.D., and William A. Hammond, M.D. This agent seems to be distinctly narcotic and emetic. We had but a small supply. It has since been re-examined.—*Charleston Medical Journal and Review*, vol. xiv., page 721.

1860.

No. 11. On the alkaloids of corroval and vao; by William H. Hammond, M.D., and S. Weir

Mitchell, M.D.—*Proceedings of the Academy of Natural Sciences*, Biological department, April, 1860, page 4.

No. 12. The production of cataract in frogs by absorption of cane sugar. The facts of this curious little paper were, I think, in part antedated a few months by some remarks of Bernard unknown to me when I wrote.—*American Journal of the Medical Sciences*, N. S., vol. xxxix., page 106.

No. 13. Researches upon the venom of the rattlesnake, with an investigation of the anatomy and physiology of the organs concerned. *Smithsonian Contributions to Knowledge*; quarto, pp. 150, July, 1860.

This quarto, with its many drawings, was the result of four years of such small leisure as I could spare amidst the cares of constantly increasing practice. The story of the perils and anxieties of this research, embarrassed by want of help and by its great cost, is untold in its pages. It was the parent of renewed Indian researches. So far as the habits, anatomy, and physiology of serpents are concerned, no one has bettered this work. An enormous addition was made in it to venom toxicology; that venoms are respiratory poisons was settled by it, and the pathology was also much advanced; many questions of antidotes were set at rest. It contained, of course, errors, now corrected in the later researches of the author, and,

quite recently, of the author and Prof. Reichert. (See Nos. 14, 27, 35, 81, 82.)

1861.

No. 14. On the treatment of rattlesnake bites. The popular antidotes were disposed of, especially the so-called Bibron's antidote. It was shown that stimulus was only indicated by the primary heart-failure, and had but a limited value. (See Nos. 15, 18, 27, 35)—*North American Medico-Chirurgical Review*, vol. v., page 269.

1862.

No. 15. Sur la resistance aux effets du curare offerte par la tortue connue sur le nom de Snapping turtle (*Chelonura serpentina*). Showing the extreme difficulty of reaching a lethal dose in this animal.—*Journal de la Physiologie de l'Homme et des Animaux*, tome v., page 109. Paris.

No. 16. Experiments and observations upon the circulation in chelonia—as *Chelonura serpentina*—with especial reference to blood-pressures in both arteries and veins. The earliest study of reptilian blood-pressure. I proved this to be one-third that of mammals; also that the central end of cut veins exhibits pulsation showing low capillary resistances; also that the venous pressure is one-sixth of the arterial; also I pointed out that, contrary to modern teaching, the respiratory type is

mammalian.—*American Philosophical Society*, vol. xii., N. S., part 1, page 29.

1863.

No. 17. Researches on anatomy and physiology of respiration in chelonia. This study arose out of the work of the preceding summer. It was an elaborate experimental examination of the breathing of turtles. It proved anew that the type is mammalian, but that the situation of the breathing muscles is reversed—those for inspiration being external, those for expiration being within. It records the first discovery of a true physiological chiasm other than that of the eyes. This nerve-crossing is on the larynx, and is in type like that of the eyes. One laryngeal nerve may be cut, and the two sides of the larynx continue to move as before. This interesting discovery led to Jeffries Wyman's finding chiasms in birds and serpents. In the former they are not physiological. The comparative anatomy was studied with care and beautifully illustrated. S. Weir Mitchell, M.D., and George R. Morehouse, M.D.—*Smithsonian Contributions to Knowledge*; quarto, pp. 42, March, 1863.

1864.

No. 18. An inquiry into the belief that Prof. Bibron was the inventor of the antidote known by his name. In the West, everywhere, this

useless mixture of iodides and mercurials had credit as an antidote and as coming from the famous herpetologist Bibron. I showed that it was valueless and that he never had heard of it.—*American Journal of the Medical Sciences*, N. S., vol. xlviii., page 420.

The years from 1862 to 1865 left a busy Army surgeon small leisure for laboratory work. The organization of the Christian Street Hospital for nervous diseases, and later that of Turner's Lane, afforded a chance for study unknown before. I became the senior acting assistant surgeon, with George R. Morehouse, M.D., and later with William W. Keen, Jr., M.D., assistant surgeon. It was agreed that each of our papers should profit by the notes of all of us, and that the name of the writer of each essay should stand first on the title-page. After two years, in which thousands of pages of notes were taken, our first paper appeared, No. 19 of my list. It was founded on our joint notes and was written by me.

No. 19. Reflex paralysis (circular No. VI., Surgeon-General's Office); by S. Weir Mitchell, M.D., assistant surgeon (acting), George R. Morehouse, M.D., assistant surgeon (acting), and William W. Keen, Jr., M.D., assistant surgeon, U. S. A.

This important paper records cases of sudden

palsy, the result of wounds in remote regions of the body. (See Nos. 20, 24.)

No. 20. Gunshot wounds and other injuries of nerves; by S. Weir Mitchell, M.D., George R. Morehouse, M.D., acting assistant surgeons, and William W. Keen, M.D., assistant surgeon, U. S. A., U. S. Hospital for Injuries and Diseases of the Nervous System, Turner's Lane. J. B. Lippincott & Co. pp. 164.

It is difficult to analyze this small volume. It almost may be said to have created a novel symptomatology for nerve injuries, adding a large number of interesting facts in regard to nutritive changes in joints, skin, nails, and hair. Here is advised the local use of massage in such cases, of injections of atropia for spastic states, and here are the first hints as to ascending neuritis. Two thousand pages of notes were taken in two years, and from these the cases of this book and of some later work were largely taken. (See for nerve injuries, Nos. 26, 39, 44, 48, 49, 51, 62, 65, 73.)

No. 21. On malingering; simulation of palsies, epilepsies, etc.; by William W. Keen, M.D., S. Weir Mitchell, M.D., and George R. Morehouse, M.D. This paper has been forgotten. It contains a curious series of studies by the staff, of their own efforts to simulate disease for the purpose of investigation.—*American Journal of the Medical Sciences*, N. S., vol. xlviii., page 367.

1865.

No. 22. Arsenical albuminuria. A short paper showing that when arsenic is used to excess, especially in phthisis, there are occasional traces of albumin in the urine.—*New York Medical Journal*, vol. vii., page 169.

No. 23. On the antagonism of morphia and atropia; by S. Weir Mitchell, M.D., William W. Keen, M.D., and George R. Morehouse, M.D. This paper was based on experiments and observations made at Turner's Lane Hospital. We concluded that subcutaneous use of morphia was more rapid and useful if made near the site of the pain in causalgia. The combined use of atropia and morphia was here first suggested and passed into our daily practice. The effects of each drug used alone were studied, and then of the two together, their antagonisms made clear, and also their agreements in action, as in a common tendency to enfeeble the bladder. The narcosis of morphia is lessened by the presence of atropia, but its analgesic power is unaltered.—*American Journal of the Medical Sciences*, N. S., vol. 1., page 67.

1866.

No. 24. Paralysis from peripheral irritation; a careful review of all known cases. (See Nos. 19, 20.)—*New York Medical Journal*, vol. ii., pages 321 and 401.

1867.

No. 25. On retrogressive and other spastic movements in birds, caused by cold applied to definite regions of skin. These curious effects need to be re-studied, and have been in part by Sir B. W. Richardson and Dr. Ott of Easton.—*American Journal of the Medical Sciences*, N. S., vol. lii., page 102.

No. 26. A paper on nerve injuries, with many new cases. (See No 20.)—*United States Sanitary Reports*, Medical volume, page 412. pp. 85.

1868.

No. 27. Contributions to the toxicology of snake venoms. Innocuousness of crotalus venom for that serpent, and for birds, etc., when ingested. This paper describes the wonderful influence of venom on the vessels of the peritoneum, and the rapid disintegration of their walls as viewed under the microscope. (See for full details, Nos. 81, 88.)—*New York Medical Journal*, vol. vi., page 289.

No. 28. On reflex spasms and palsies caused by cold applied to the skin of birds.—*American Journal of the Medical Sciences*, N. S., vol. lv., page 25.

1869.

No. 29. Researches on the physiology of the cerebellum. This paper has caused much dispute. It affirms that most of the motor disturb-

ances of cerebellar injury are due to irritation ; that the cerebellum of the pigeon may be nearly, if not altogether destroyed, with final recovery even of power to fly well. That the cerebellum is a reinforcing ganglion. Of late the views of this essay have been reaffirmed by Italian physiologists.—*Ibid.*, N. S., vol. lvii., page 320.

No. 30. On certain forms of localized neuralgia accompanied by purpura and twitching of muscles at the seat of pain ; also on purpura as a neurosis.—*Transactions Philadelphia College of Physicians*, N. S., vol. iv., page 282.

No. 31. On the extreme difficulty of influencing birds by such amounts of opium as are easily lethal in mammals. Two hundred drops of acet. opii were given a pigeon without visible result, and doses of a grain of morphia under the skin appeared to be unfelt. One pigeon swallowed, unhurt, twenty-three grains of opium. These strange facts remain unquestioned and unexplained.—*American Journal of the Medical Sciences*, N. S., vol. lvii., page 37.

1870.

No. 32. A study of opium and its derivative alkaloids.—*Ibid.*, N. S., vol. lix., page 17.

No. 33. Bromic ulcers ; being the first account of this symptom. Bromic rupia.—*Transactions*

Philadelphia College of Physicians, N. S., vol. iv., page 347.

No. 34. Proposal to use lithium bromide ; being the first introduction of this drug. It contains the largest amount of bromine of all the bromides, is very deliquescent, and therefore easily absorbed, and is the best sleep-producer of all the bromides, and acts the most rapidly.—*Ibid.*, page 350.

No. 35. New observations on poisoning by rattlesnake venom. Effects on crustacea, insects, and on blood. (See Nos. 13, 14, 18, 27, 81, 82, 88.)—*American Journal of the Medical Sciences*, N. S., vol. lix., page 317.

No. 36. On rapid respiration after gunshot wound of right lung, in 1864, followed ever since by respiration varying from eighty to one hundred and twenty, without marked rise of pulse. Reported by John H. Brinton, M.D., and S. Weir Mitchell, M.D. (See No. 116.)—*Ibid.*, N. S., vol. lx., page 435.

No. 37. Skimmed milk as an exclusive diet in disease.—*Philadelphia Medical Times*, vol. i., pages 19 and 213.

1871.

No. 38. Arrest of the growth of nails on the palsied side in certain cases of hemiplegia.—*American Journal of the Medical Sciences*, N. S., vol. lxi., page 420.

1872.

No. 39. Injuries to nerves, and their consequences. This volume, into which were gathered our war cases and many more, has remained the great storehouse of facts from which other books have drawn largely. In it are the earliest distinct accounts of ascending neuritis and the first recommendations as to the use of splint-rest and cold in neuritis, etc. The study of the psychical and other phenomena of the amputated here recorded has received no additions, and remains the sole authority. The minute pathology has, of course, become obsolete.

An interesting addition has of late been made to the value of these war cases. Dr. John K. Mitchell has with inconceivable trouble recovered the present histories of some forty of the survivors of our great conflict, thus giving my own cases, with these added records, a history covering nearly thirty years. (See Nos. 44, 48, 49, 51, 62, 65, 73.) J. B. Lippincott & Co. pp. 400.

No. 40. Nail-growth in organic and hysterical hemiplegias.—*Philadelphia Medical Times*, vol. ii., page 327.

No. 41. The use of nitrite of amyl to abort epileptic attacks. Since then several authors have written as to this, especially in England, without any reference to the original paper.—*Ibid.*, vol. ii., page 262.

No. 42. Clinical lecture on certain painful affections of the feet. In this paper I first described the peculiar disease to which later I gave the name Erythromelalgia. (See Nos. 72, 121.)—*Philadelphia Medical Times*, vol. iii., page 81.

1873.

No. 43. Wear and Tear; being hints for the overworked. This was an attempt to call the attention of Americans to their excesses in work and their neglect of play. It dealt also with the early or signal symptoms of failure in body and mind. Medical details are avoided. It was meant for popular use and warning. (See Nos. 59, 70, 108, 122.) J. B. Lippincott & Co. pp. 88.

No. 44. Influence of nerve lesions on local temperatures; comparison of clinical and experimental results. Nerve sections cause fall and then rise of local temperature, so also does thorough freezing of a nerve. To know if the rise after section be due to the direct influence of nerves or to vasal dilatation, I emptied my own arm of blood by a bandage, put on a tourniquet and then froze my ulnar nerve at the elbow. No rise of temperature occurred; the blood being then let in, the thermometer rose above the normal in the ulnar territory. The increase of heat after section is due to vascular paresis.—*Archives of Scientific and Practical Medicine*, vol. i., page 351.

No. 45. Cases illustrative of the diagnostic use of the ophthalmoscope in intra-cranial lesions. A paper of only temporary value. S. Weir Mitchell, M.D., and Wm. Thomson, M.D.—*Amer. Journal of the Medical Sciences*, N. S., vol. lxvi., page 91.

No. 46. 1. Favorable influence of long rest in bed upon the neuralgia of locomotor ataxia. 2. In this brief paper I was first to call attention to the fragility of bones in this disease.—*Ibid.*, N. S., vol. lxvi., page 113.

I still think rest valuable in obstinate cases of spinal ataxic neuralgia. It may be usefully aided by suspensions. (Nos. 59, 70, 105, 122.)

No. 47. Anal and perineal neuralgia. An unimportant paper.—*Philadelphia Medical Times*, vol. iii., page 659.

No. 48. Neurotomy. A discussion of surface distribution of nerves; of explanations of the apparent preservation and early restoration of sensation and motion after nerve sections. Defects and inaccuracies in the anatomies as to surface distributions of nerves. This paper called forth a sharp criticism by Prof. Henry Chapman in defence of the anatomists and of their accuracy. (See Nos. 49, 51, 62, 65, 73.)—*Ibid.*, vol. iv., page 145.

1874.

No. 49. The supply of nerves to the skin. A reply to Prof. Chapman. The remarkable varia-

tions in the median and other nerve supplies are here pointed out, and the need for further information through clinical results. The anatomies were then and still are defective as to this matter. They should describe the variations in surface nerve distribution.—*Philadelphia Medical Times*, vol. iv., page 401.

No. 50. Multiple emboli in muscles, and finally death from emboli in the right middle meningeal artery; left hemiplegia.—*Ibid.*, page 613.

No. 51. Traumatic neuralgia; section of median nerve. The later history is to be found in Nos. 62, 65, 73.—*American Journal of the Medical Sciences*, N. S., vol. lxviii., page 17.

No. 52. Headaches. A series of papers on headaches due to sun-heat, meningitis, over-use of sensitive or growing brains, and, finally, those caused by eye-strain.

Up to this time, the oculists occasionally record pain in the head as associated with defects of vision; but in no book on headaches were they systematically attributed to defective eyes.

It is made clear in this essay that astigmatism, defects of accommodation, and failures in the extra-ocular muscles are all competent to cause headaches. The credit of directing the attention of the general profession to this cause of headaches has been claimed by at least one other author for papers of his own of later date.

(See No. 63.)—*Medical and Surgical Reporter*, July and August, 1874, page 67.

No. 53. The nervous accidents of albuminuria.—*Philadelphia Medical Times*, vol. iv., page 689.

No. 54. Post-paralytic chorea. In this paper I first called attention to this condition.—*American Journal of the Medical Sciences*, N. S., vol. lxxviii., page 342.

1875.

No. 55. Headaches of adolescence and the decline of life.—*Medical and Surgical Reporter*, vol. xxxii., page 100.

No. 56. Nitrite of amyl; its use to abort spasms; its great value at times as a diagnostic means of discriminating between congestive and other states of the brain.—*Philadelphia Medical Times*, vol. v., page 353.

No. 57. Stumps, spasmodic disorders of. Chorea of stumps, etc. (See No. 39.)—*Ibid.*, page 305.

No. 58. Spinal arthropathies. Reclamation of discovery of these disorders for my father, Prof. John K. Mitchell. Dr. Gull was usually supposed to have been the first to describe joint disease as due to precedent spinal lesions. Arthropathies from nerve-trunk lesions. (See No. 39.) Cases of joint-disease followed by spinal symptoms.—*American Journal of the Medical Sciences*, N. S., vol. lxxix., page 338.

No. 59. Rest in the treatment of disease. In neuritis, by splint, aided by ice, etc. Rest in spinal diseases. A study of the evils of rest, and how to avoid them. Record of Mrs. G. The earliest case of full rest treatment. Her case occurred in January, 1874, and was the first in which massage was used by me as a daily tonic to counteract the evils of rest in bed. Then electricity and general tonics, extra diet, seclusion, etc., were soon added. The treatment came nearly perfect out of this case. (See Nos. 46, 70, 108, 122.)—*The Seguin Lectures*, vol. i., No. IV.

No. 60. Notes on headaches.—*Medical and Surgical Reporter*, vol. xxxii., page 100.

1876.

No. 61. Disorders of sleep. Especially the first description of sensory discharges, nocturnal hemiplegias, etc.—*Virginia Medical Monthly*, vol. ii., page 769.

No. 62. Neurotomy; cases illustrating local injuries of nerves and their trophic consequences. (See Nos. 65, 73.)—*American Journal of the Medical Sciences*, N. S., vol. lxxi., page 321.

No. 63. Eye-strain. Headaches, vertigo, insomnia, nausea, general asthenia from eye-strain. Repeats the experience of my paper of 1874, and shows how much secondary causes have to

do with calling out the ill effects of optical defects. (See 52.)—*Ibid.*, N. S., vol. lxxi., page 363.

No. 64. Functional spasms, with illustrations. Many disorders may be thus classed, but this paper deals chiefly with extreme cases of spasm, local or general, evolved by some normal motor act.—*Ibid.*, N. S., vol. lxxii., page 321.

No. 65. Local injuries of nerves; examination of three regenerated nerves.

Takes up history of Miss C. from No. 62; a second resection of musculo-spiral nerve; renewal of one inch found; resected three inches. Incomplete loss of sensation despite section of median and musculo-spiral. (See No. 73.)—*Ibid.*, page 330.

No. 66. Clinical reports. Anæmic headaches, etc. The symptom numbness.—*Medical and Surgical Reporter*, vol. xxxiv., page 101.

1877.

No. 67. Relation of pain to weather. Case of Captain Catlin. Accurate study of relation of traumatic neuralgia of stump to weight of air, temperature, humidity, etc., showing that storms are responsible for a large percentage of the attacks. The first scientific study of the influence of weather on pain. This and the subsequent researches made by Captain Catlin on his own

case make up a mass of invaluable and neglected information not to be found elsewhere. (See No. 83.)—*American Journal of the Medical Sciences*, N. S., vol. lxxiii., page 305.

No. 68. Nervousness in the male. The symptom nervousness; its almost isolated existence in certain cases; its sudden production in some examples. A clinical lecture.—*Medical News*, vol. xxxv., page 177.

No. 69. Oration before the Medico-Chirurgical Faculty of Maryland on extreme measures in therapeutics. Summary of rest treatment, etc. Illustration of excessive bleeding.—*Transactions of the Medico-Chirurgical Faculty of Maryland for 1877*.

No. 70. Fat and Blood; a method of treating neurasthenia and hysteria. The first effort in book form to spread the full knowledge of rest treatment before the profession. This treatment was received with incredulity, and my results seriously questioned or ridiculed. It was a long while in making its way in America—far longer in Europe. This book has gone through many editions and has been translated into French, German, Italian, and Russian. (See Nos. 46, 59, 105, 122.) J. B. Lippincott & Co.

No. 71. Memorials of William Harvey.—*Philadelphia Medical Times*, vol. vii., page 257.

1878.

No. 72. Erythromelalgia: a rare vasomotor neurosis of the extremities. I here describe again more fully the disease sometimes called red neuralgia. With this essay it took its place in nosology, and has since been the subject of one book and many papers. (See Nos. 42, 121.)—*American Journal of the Medical Sciences*, N. S., vol. lxxvi., page 17.

No. 73. Some lessons of neurotomy. (See Nos. 20, 26, 39, 44, 48, 49, 51, 62, 65.)—*Brain*, vol. i., page 287.

No. 74. Address on the dedication of the new Laboratories of the University of Pennsylvania. pp. 40.

1879.

No. 75. Cremaster reflex; a clinical study.—*Journal of Mental and Nervous Disease*, vol. vi., page 577.

1880.

No. 76. Clinical notes on locomotor ataxia, and its hygienic management.—*Philadelphia Medical Times*, vol. x., page 419.

No. 77. The true palsies of hysteria, and the conditions simulative of this peculiar paralysis. Two lectures.—*Ibid.*, vol. xxxviii., pages 66, 130.

1881.

No. 78. Lectures on the nervous diseases of women. Hysteria; disorders of sleep; habit chorea; chorea in the negro; epidemic of chorea; relation of chorea to weather. The hysterical rectum and bladder. Simulation and dissimulation of disease. Second edition, 1884; pp. 125. Lea Brothers & Co.

1883.

No. 79. Poison of the Gila lizard (*Heloderma horridum*). With Edward Reichert, Professor of Physiology in the University of Pennsylvania. This poison is an agreeably odorous, thin fluid, and is a heart poison. It causes no local effects like venoms. It needs to be studied anew.—*Medical News*, vol. xlii., page 209.

No. 80. Peripheral nerve lesions. (See Nos. 20, 26, 39, 44, 48, 49, 51, 62, 65, 73.)—*American Journal of the Medical Sciences*, N. S., vol. lxxxvi., page 17.

No. 81. Preliminary report to the National Academy of Sciences on the poisons of serpents.

Having conceived the idea that venoms are not single, but a mixture of poisons, I began with Prof. Reichert a study of their chemistry and toxicology. This report announced the separation of several poisonous albumins by dialyses and other means. (See Nos. 14, 27, 35, 82, 88.) S. Weir Mitchell,

M.D., and Edward Reichert, M.D.—*Medical News*, vol. xlii., page 461.

No. 82. Remarks upon some recent investigations on the venom of serpents.—*Lancet*, vol. ii., page 94.

No. 83. Relations of pain to weather; by Captain Catlin, U. S. A., with notes by S. Weir Mitchell, M.D. (See No. 67.)—*Transactions Philadelphia College of Physicians*, 3d S., vol. vi., page 411.

Captain Catlin's final study is to be found in the *Transactions of the National Academy of Sciences, U. S. A.*, vol. vi., 1893.

1884.

No. 84. Unilateral swelling of hysteria, with or without added œdema, but associated with hysterical hemiplegia or paresis.—*American Journal of the Medical Sciences*, N. S., vol. lxxxviii., page 94.

1886.

No. 85. A physiological study of the knee-jerk and of the muscle-jerk evolved by a blow. An important paper. Taking Jendrassik's observation to the effect that a muscular effort increased knee-jerk, we showed that the knee-jerk varies in health, may be exhausted by too much use, and may increase from frequent excitation.

All volitional acts, if strong enough, may

increase the knee-jerk of either leg, and even such small acts as winking, etc., are competent to do so under favoring circumstances.

Weak innervation of the crural nerve increases, and strong innervation of the same prohibits knee-jerk.

All sciatic innervation increases knee-jerk.

Volitional reinforcement lasts for an appreciable time after volition ceases.

Continued violent muscular acts, as of both arms and hands, at last enfeeble the knee-jerk, and this enfeeblement lasts for an appreciable time.

Passive tension is not essential for the production of knee-jerk.

Moderate tension mechanically favors it.

Extreme tension destroys it, even in spastic cases, and this is probably mechanical in part, but also, and to a large degree, physiological.

An act of will directed to a part which is functionally inert, or to amputated parts, reinforces knee-jerk. Hence it is not the muscular motion which is the essential factor.

Strong or weak stimulation of one sciatic in an etherized animal intensifies the knee-jerk of the other leg; pressure upon the sciatic in man, causing pain and numbness, diminishes the knee-jerk of that leg.

Elbow-, ankle-, and jaw-jerks obey the same laws as the knee-jerk.

One knee-jerk does not reinforce the other.

Mere touch has no effect on knee-jerk. All abrupt impressions, as of pain, heat or cold, anywhere on the skin, increase knee-jerk.

Gustation has no effect on knee-jerk.

Violent optical impressions, in sensitive cases, increase knee-jerk.

Nitrite of amyl has no effect on knee-jerk.

Etherization, if profound, abolishes the knee-jerk in dogs; has less effect in rabbits.

All short faradic currents, anywhere, if strong enough to move muscles, increase knee-jerk.

The wire-brush, with faradism on the dry skin, is one of the most effectual of all means of addition to knee-jerk.

Short galvanic currents, not strong enough to move muscles, give, under certain conditions, marked increase of knee-jerk.

Galvanism to temples especially, but also to other regions of the head, gives large reinforcements to knee-jerk.

Making circuit is more effectual than breaking, and these effects soon wear out.

The negative pole to temple gives greater and more constant increase of knee-jerk than the positive in same position.

There is more effect on knee-jerk from pole on temple than over leg-centres. Effect the same for either knee-jerk.

Galvanism to temples, with violent synchronous muscle acts, very greatly reinforces knee-jerk.

Long-continued ascending spinal galvanic currents give good increase of knee-jerk; descending, far less.

Moderate constant currents to spine do not reinforce knee-jerk.

The skin-reflexes (cremaster abdominal) are not reinforced by muscle acts or by pain.

When the belly of a muscle is struck, the resulting contraction *obeys all the laws of reinforcement which apply to the knee-jerk*. Tension has upon it much the same influence as on knee-jerk. One muscle-jerk does not reinforce another.

The muscular movement caused by electricity seems incapable of reinforcement.

Tension lessens the effect of even quite strong faradic currents as to pain and motion.

The many discoveries of this paper have not yet ceased to stimulate research. The very important fact that the same laws govern muscle-jerk from a direct blow, and knee-jerk, have not received full attention, nor the fact that sensations reinforce knee-jerk and muscle-jerk. S. Weir Mitchell, M.D., and Morris J. Lewis, M.D. (See Nos. 86, 102.)—*Medical News*, vol. xlviii., pages 169, 198.

In the after light thrown on this subject by Lombard's and Bowditch's papers, I have felt more and more dubious as to some of the theoretic explanations of this paper. Its importance lies, however, in its interesting and as yet uncontradicted facts.

No. 86. Tendon-jerk and muscle-jerk in disease. An elaborate study of both, with Morris Lewis, M.D. (See Nos. 85, 94, 102.)—*American Journal of the Medical Sciences*, N. S., vol. xcii., page 363.

No. 87. Vertigo.—*A System of Medicine by American Authors.* pp. 40.

There is little novelty in this paper.

No. 88. Researches on the venoms of poisonous serpents; by S. Weir Mitchell, M.D., and Edward T. Reichert, M.D., Prof. of Physiology in the University of Pennsylvania.

This study of venom arose out of my belief in the composite nature of venoms. My early paper of 1861 left much to be desired despite the later work of Fayrer, Wall, and Richards. There were, too, some discrepancies between my early results and those of the more recent Indian observers. These we proposed to re-examine. This investigation occupied nearly four years of time, and greatly advanced our knowledge of poisonous albumins. This essay covers the chemistry, physiology, and pathology of the venoms of our own serpents and of the cobra. Our research accomplished the separation of a dialysable albuminous agent from one or more not dialysable, and the relative amount of these two sets of poison was shown to explain largely the difference between the poisonings by cobra and crotalus. The pathology of the hemor-

rhages was re-studied with care, and for the first time a full examination was made of the blood changes, with results of the utmost value and interest. The reasons for great local changes in croctalus poisoning and for their relatively slight amount in cobra deaths is perfectly explained, and the physiology also firmly re-established. A large bibliography and many colored plates illustrate this essay. (See Nos. 13, 14, 18, 27, 35, 81, 82.)—*Smithsonian Contributions to Knowledge*, No. 647; quarto, pp. 186. *Out of print.*

1887.

No. 89. Address as President before the Philadelphia College of Physicians on the Centennial Anniversary of that body. A history of the College and its founders, and of the position of the physician in Colonial life.—*Transactions Philadelphia College of Physicians*, Centennial volume, page 305.

No. 90. Headaches with apparitions. This paper called out an interesting series of such cases, not before known to medicine.—*Ibid.*, 3d S., vol. ix., page 175.

No. 91. Spastic paralyse; a clinical lecture.—*Medical News*, vol. li., page 85.

No. 92. Facial tic, and its partial relief by the freezing spray.—*Ibid.*, vol. li., page 253.

1888.

No. 93. Locomotor ataxia limited to the arms ; cases in which it passes thence to the legs, reversing its usual mode of extension.—*Ibid.*, vol. lii., page 428.

No. 94. Knee-jerk and muscle-jerk ; a lecture. (See Nos. 85, 86.)—*Ibid.*, page 677.

No. 95. Aneurism of an anomalous artery, causing antero-posterior division of the chiasm of the optic nerves and consequent bi-temporal hemianopsia ; a unique case of great physiological value, with notes by F. X. Dercum, M.D.—*Transactions of the American Neurological Association*, 1888, page 239.

No. 96. Doctor and Patient: Essays on the physician. Convalescence. Pain and its consequences. The moral management of sick and invalid children. Nervousness and its relation to character. Outdoor life. Camp-life for women. J. B. Lippincott Co. pp. 177.

No. 97. Double consciousness. The case of Mary Reynolds. This woman, by nature a somewhat sad person, passed her life, after the age of eighteen, in alternate states of melancholy or vivacity ; finally living her last twenty-five years in her acquired or second condition of consciousness. This history stands quite alone in the records of this disorder, and contains nearly all desirable

details, even to the writing in both states of consciousness.—*Transactions Philadelphia College of Physicians*, 3d S., vol. x., page 366.

1889.

No. 98. An improved mode of suspension, using the elbows in place of the axilla. A method since re-invented by several persons. With an illustration.—*Medical News*, vol. liv., page 399.

No. 99. Treatment of Pott's disease by Professor John K. Mitchell's method of continual steady extension. Illustrative cases. A revival of a very useful means.—*Transactions Philadelphia College of Physicians*, 3d S., vol. xi., page 82.

No. 100. Subjective false sensations of cold. An interesting set of unusual cases. The relation of this symptom to neuritis; gives the cases of unilateral coldness, especially that of Sir P. Broke.—*Transactions of the American Association of Physicians*, 1889, page 12.

1890.

No. 101. A test of excessive blood-pressure. When the circulation through the temporal artery is arrested by the finger, the distal end of the artery continues to pulsate; under use of agents which lessen pressure this phenomenon disappears.—*Medical News*, vol. lvi., page 58.

No. 102. The paths of motor and sensory reinforcement of knee-jerk and muscle-jerk. A very suggestive paper as to the track of reinforcements. A case of antero-lateral sclerosis with complete loss of voluntary motion from the waist down. Spastic reactions, all reinforcing by volitional movement of hands or face. Sensation, however violent, fails to reinforce. Motor reinforcement paths are open; sensation reinforcement paths are closed. Other illustrations are given. This whole subject is temptingly open. (See Nos. 85, 86, 94.)—*Ibid.*, page 297.

No. 103. Suspension in locomotor ataxia. Report on twenty-three cases, by Guy Hinsdale, M.D.; clinic of S. Weir Mitchell, M.D.—*University of Pennsylvania Medical Magazine*, vol. ii., page 341.

No. 104. Memoir of John Call Dalton, M.D.—*Transactions of the National Academy of Sciences, U. S. A.*, 1890.

No. 105. The disorders of sleep. A very full account of the states I here propose to call the *præ-dormitium* and *post-dormitium*, in their psychological relations to impending insanity. Night terrors in the adult. Sleep numbness. Nocturnal paresis or brief paralysis. Sleep ptosis. Distress in limbs, or pain only on waking from sleep. Sensory shocks, auditory, visual, mechan-

ical (general sensation), olfactory. The aura of these attacks.

Sleep-jerks; temporary hysterical ataxia or chorea on coming out of the post-dormitium, lasting from a few minutes to an hour.

Tonic spasm of legs after sleep.

Respiratory failures in sleep; ataxic, usually seen in the præ-dormitium or in deeper sleep.—*American Journal of the Medical Sciences*, N. S., vol. c., page 109.

No. 106. Unusual forms of chorea, possibly of spinal origin. Probability of some choreas being cerebral and some spinal, like the canine chorea.—*Transactions of the American Neurological Association*, vol. xvi., page 8.

No. 107. Letter to the editors of the *University Medical Magazine*, On counterfeiting death; May 28, 1890.—*University Medical Magazine*, vol. ii., page 568.

1891.

No. 108. Sciatica, treatment by splint-rest, bandages, and ice. (See Nos. 46, 59, 70, 122.)—*International Lecture Series*, April, 1891. J. B. Lippincott Co.

No. 109. Precision in medicine; its early history. Being the Presidential address before the American Medical Congress, September, 1891. Illustrations of early instruments of precision. *Transactions*. pp. 42.

No. 110. Permanent headaches. A lecture. Relations of eye-strain to these disorders. Insufficiency of glasses for relief of old eye-strains, etc.—*International Lecture Series*. J. B. Lippincott Co., 1891.

1892.

No. 111. Address on opening of the Institute of Hygiene, University of Pennsylvania. pp. 30.

No. 112. Nursing; a lecture to nurses. pp. 15.

No. 113. Spasms, unusual forms of, evolved by voluntary activity. Reported by Ch. Burr, M.D.—*New York Journal of Mental and Nervous Disease*, 1892, page 103.

No. 114. Precision in the treatment of chronic disease. Rest and partial rest treatment. Pain; case of lifelong absence of sense of pain. Address before the New York Academy of Medicine, December.—*New York Medical Record*, vol. xlii., page 723.

1893.

No. 115. The conduct of the medical life. Two lectures delivered to the students of the University of Pennsylvania.—*University of Pennsylvania Medical Magazine*, vol. iv., page 109.

No. 116. Hysterical rapid respiration; a clinical study. Diagnostic value of rapid costal type of

breathing. Tracings. (See No. 36.)—*American Journal of the Medical Sciences*, N. S., vol. cv., page 235.

No. 117. Undescribed form of rupia-like skin disease in a case of hysteria; with comments by Prof. Duhring. (See last paper.) Colored illustration.—*Ibid.*

No. 118. Clinical lessons given at the Infirmary for Nervous Diseases in 1893. Choreoid movements in adult males resembling habit spasm—probably hysterical in origin.—*Medical News*, vol. lxii., page 231.

No. 119. Post-hemiplegic pain. Præ-hemiplegic pain. Post-hemiplegic joint disease. Joint disease limited to the side of a subsequent hemiplegia. Post-hemiplegic nodes. Much of this paper is novel, and is, I believe, the first description of these pain symptoms as related to hemiplegias and of these somewhat rare nodes.—*Ibid.*, vol. lxii., page 421.

No. 120. Hysteria, psychic anæsthesia for touch; psychic anosmia; psychic blindness in its variations, with comments. Clinical lessons.—*Ibid.*, vol., lxii., page 101.

No. 121. Erythromelalgia and Raynaud's malady. A thorough study of erythromelalgia, and a report of a case of absolute and permanent cure by nerve sections and stretching of the nerves

of the affected foot. (See Nos. 42, 72.)—*Ibid.*, vol. lxiii., page 197.

No. 122. Sciatica, treatment by splint-rest and bandages; with illustrations, etc. (See Nos. 46, 59, 70, 108.)—*Ibid.*, vol. lxiii., page 7.

No. 123. Three cases of sudden mental aberration with rapidly developed anterior scoliosis of unusual type. I have seen this complex symptom-group some six or seven times. I believe it to be a distinct disease, not always hysterical.—*Ibid.*, vol. lxiii., page 656.

1894.

No. 124. Temperature of the extremities; differences between right and left feet in health; normal fall of temperature when erect, or when the feet are pendent.—*Ibid.*, vol. lxiv., page 6.

NOVELS, ESSAYS, AND POEMS.

1880. Hephzibah Guinness ; Thee and you ; A draft on the Bank of Spain. Three tales of the older Philadelphia.

1882. The Hill of Stones, and other poems.

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