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able for resisting disease. The "Montana appetite" is a well-known phenomenon.

The sun warmed diseased parts, and, evaporating moisture from sores and issues, maintained a greater flow of blood and lymph through these parts. The cool, dry air also increased such evaporation, etc. How far the luminous sun rays benefited health by penetrating to and being absorbed by the blood was not yet known. Ultra-violet rays were absorbed by the surface and did not penetrate. The sun caused pigmentation of the skin, and the pigment prevented sunburn. Patients required to be gradually exposed to the sun and allowed to pigment; they must not be sunburnt or overheated. Febrile cases of phthisis must not, then, be exposed to the sun. Efforts were being made by the writer and Sir Henry Gauvain to continue the cure on sunless days in England by the application of glowing red electric heaters, by which the cooling power out of doors could be maintained and the child kept comfortable by radiant heat. Coke fires also were being tried out of doors on the shingle beach at the Hayling Island Treloar Hospital. The sun, or the stoves and fires, kept the children comfortable and happy out of doors.

THE HISTORY OF HORSE-RIDING IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

By RICHARD J. CYRIAX,

M.R.C.S., L.R.C.P., D.P.H.,

Assistant Tuberculosis Officer for Warwickshire and Coventry; Late Assistant Resident Medical Officer, Mount Vernon Hospital for Tuberculosis, Northwood.

GRADUATED exercise and work play so important a part in the modern treatment of certain cases of pulmonary tuberculosis that some interest may attach to a brief glance at the time when horse-riding was recommended, not merely as a serviceable adjunct to other remedies, but as an absolute specific in any and every stage of the disease.

The first to advise horse-riding in this particular capacity was no less an authority than Thomas Sydenham (1624-1689). His principal statements on the subject appeared in the first edition of "*Dissertatio Epistolaris Ad . . . Gulielmum Cole, M.D., etc.*" (1682). They were slightly amplified in later editions.¹ A few additional remarks of relatively less importance were published posthumously in a work entitled "*Processus Integri*," which was written for his son, Dr.

¹ First edition, London, 1682; second edition, London, 1685.

William Sydenham.¹ The chief passages are as follows, the English translation adopted here being that of J. Swan:² “. . . The principal assistant in the cure of this disease is riding on horseback every day, insomuch that whoever has recourse to this exercise in order to his cure, need not be tied down to observe any rules in point of diet, nor be debarred any kind of solid or liquid aliment, as the cure depends wholly upon exercise. Some persons that have been recover'd by this method have been seiz'd with a tumor in the neck, not much unlike those in the king's evil.”³

Furthermore, Sydenham stated that riding “is not more beneficial to hypochondriac than to consumptive subjects, of which distemper several of my relations have been cured by riding long journeys by my advice. For I was well assured that no other method or medicines were more effectual. Nor is riding on horseback only proper in slight indispositions, accompanied with a frequent cough and wasting, but even in confirmed consumptions, wherein the looseness is succeeded by night-sweats, which are the general forerunners of death, in those who perish by this disease. In fine, how desperate soever a Consumption may, or is esteem'd to be (two-thirds of such as die of chronic diseases being destroy'd thereby), yet I solemnly affirm, that riding is as effectual a remedy in this distemper as mercury in the lues venerea, or the bark in intermittents; provided the patient be careful to have his sheets well aired, and takes sufficiently long journeys. But it must be observed that such as are past the prime of life, must continue the use of riding much longer, than such as are not yet arrived at that age; which I have learnt from much experience, that scarce ever failed me; and tho' riding on horseback does most service in consumptive cases, yet riding in a coach does sometimes produce surprising results.”⁴

Sydenham's works were written in Latin, and the expression “consumptive subjects” in the second extract was rendered in the original by the terms “tabes” and “phthisis.”⁵ The point is of importance, for numerous forms of “consumption” were recognized during his lifetime.⁶ “Nervous consumption” was defined, even as late as the year 1803, as a “wasting of the body, without any remarkable fever, cough, or difficulty of breathing; but attended with want of appetite

¹ First definite edition, London, 1693. Many later ones.

² “The Entire Works of Dr. Thomas Sydenham.” Second edition, London, 1749.

³ “Processus Integri.” Fifth edition. London, 1726, pp. 98, 99 (Latin). Swan's translation (second edition), p. 623.

⁴ “Dissertatio epistolaris,” etc.; 1682, pp. 166, 167 (Latin). Only the first part of this extract appears in the first edition, but it appears in full in later editions, such as “Opera Universa.” Third edition. London, 1705, pp. 383, 384. Swan's translation (second edition), pp. 402, 403. The italics in the original have been omitted.

⁵ “Neque magis Hypochondriacis prodest hoc exercitii genus, quam Tabidus Phthisicisque,” etc., *op. cit.*, 1682, p. 166.

⁶ Cf. R. Morton, “Phthisiologia,” London, 1694.

and a bad digestion."¹ "Hypochondriacal consumption" denoted nervous dyspepsia associated with cachexia and hysterical symptoms.² But there is little doubt that the various kinds of "consumption" treated by Sydenham included cases of genuine pulmonary tuberculosis, as is shown by the symptoms enumerated in the extract which appears above.

Even when every allowance has been made for the very great probability that many of Sydenham's successful cases were not tuberculous at all, it is still difficult to comprehend how the utterly indiscriminate use of riding proved sufficiently salutary to warrant his wholehearted recommendation. His statements, although brief, were so emphatic that the difficulty is not solved by the fact that they were made in a work which did not deal exclusively with "consumption," and would doubtless have been amplified later if their author had lived to write the special treatise upon the disease intended at the time of his death.³ But there must be some explanation, and the most probable one is that the benefits occasioned by riding in cases of genuine phthisis were due to exposure to fresh air, which the patients would otherwise have been denied; in other words, that the really crucial factor was not the actual exercise, but aeration. This, however, does not seem to have been the opinion either of Sydenham himself or of his followers. They laid great stress upon the physiological effects of riding as such, relatively little upon fresh air, and thereby appear to have missed the mark entirely.

There is no doubt that Sydenham was responsible for introducing horse-riding as a remedy for pulmonary tuberculosis. It is true that exercise, both active and passive, had been prescribed in this disease during the period of classical antiquity;⁴ but riding had been used sparingly, and only as an auxiliary to other measures. Indeed, Antyllos, who flourished at the beginning of the second century A.D., specifically stated that riding was most injurious to the chest.⁵ Moreover, that this particular exercise was not in general use at the end of the seventeenth century can be inferred from the well-known work "Phthisiologia," by R. Morton, of London (1637-1698). This treatise was published five years after Sydenham's death, and contains no allusion whatsoever to riding. If the latter had been a customary remedy, Morton would undoubtedly have mentioned it, if only for the purpose of condemning it. Finally, Sydenham's contemporaries, who

¹ "The Edinburgh Practice of Physic, Surgery, and Midwifery," vol. ii. London, 1803, pp. 462, 463.

² Cf. "A System of the Practice of Medicine, from the Latin of Dr. Hoffmann," W. Lewis and A. Duncan. Two vols. London, 1783, vol. ii., p. 60.

³ "Processus Integri," Preface.

⁴ Celsus, "De Medicina," Lib. III., c. xxii.

⁵ Quoted by Oreibasios, "Collectanea Medicinalia" (Lib. VI., c. xxiv.), from the perished work of Antyllos, "De Auxiliis quæ fiunt."

were best qualified to offer an opinion upon the question, all regarded his method as original. They associated it with his name, and referred to no earlier literature upon the subject, with the sole exception of that of the period of classical antiquity.¹

The new remedy attracted attention first upon the Continent. The earlier reports of its employment by G. Baglivi, of Rome² (1668-1707), G. E. Stahl, of Halle (1660-1734), the originator of the "Phlogiston" theory of combustion,³ and J. P. Lasalle,⁴ were uniformly favourable. Sydenham's fame in England was posthumous, but as soon as his writings began to be widely known, which they did at the beginning of the eighteenth century, riding became as popular a remedy for phthisis in this country as it already had been for some years abroad. It is credited with having cured John Wesley⁵ (1703-1791), and was strongly advocated by several writers, notably F. Fuller (1670-1706), who recommended riding or carriage exercise, not only in phthisis, but in many other chronic diseases. His book on the subject, published in London in 1705, was entitled "*Medicina Gymnastica: or a Treatise concerning the Power of Exercise, with Respect to the Animal Economy, and the great Necessity of it in the Cure of several Distempers.*" It was an emphatic success. No less than nine editions were issued, the last in 1777.⁶ The book possesses little intrinsic value, but it appealed to the lay public, and thereby assisted to disseminate Sydenham's opinions.

So great an interest was now aroused in the subject that several academical theses dealing with the use of riding in phthisis and chronic diseases generally were issued from the Dutch and German Universities.⁷ But it was soon found that the new remedy possessed most serious disadvantages. The literature contains little direct information concerning the disasters which must have ensued from treating all

¹ E. A. Otto, "*Motum optimam corporis medicinam,*" etc. Halle, 1701, § 17. J. A. Zellmann, "*De Commodis exercitationis corporis.*" Wittenberg, 1705, § 18.

² "*De Praxi Medica.*" Rome, 1696, pp. 115, 116.

³ "*Propempticon inaugural de novo specifico anti-phthisico, equitatione.*" Halle, 1699.

⁴ "*Traité des maladies de la poitrine.*" Bordeaux, 1704, p. 160.

⁵ M. J. Chapman, "*Lings' Educational and Curative Exercises.*" Fourth edition, edited by C. A. Georgii. London, 1875, p. 14.

⁶ All the editions were published in London. Second edition, 1705; third, 1707; fourth, 1711; fifth, 1718; sixth, 1728; seventh, 1740; eighth, 1771; ninth, 1777. The sixth was translated into German. Lemgo, 1750. J. Addison referred to this book in the *Spectator*, July 12, 1711.

⁷ (1) C. F. Breitenbach, "*Dissertatio academica de equitationis eximio usu medico.*" Leipsic, 1713. Another edition by C. M. Adolphi, "*De equitationis eximio usu medico dissertatio.*" Leipsic, 1729. (2) D. Van Heemskerck, "*Thema gymnastico-medicum inaugural de equitatione.*" Leyden, 1734. (3) J. P. Erpel, "*De Commodis et incommodis equitationis in hominum sanitatem redundantibus,*" etc. Halle, 1749. (4) G. G. Richter, "*Prolusio de salutari, limitando tamen, equitationis exercitio.*" Göttingen, 1757. (Included in G. G. Richter's "*Opuscula Medica.*" Edited by J. C. G. Ackermann. Frankfort and Leipsic. Vol. iii., 1781, pp. 367-391.)

and sundry cases of pulmonary tuberculosis on the lines indicated by Sydenham; but that disasters did actually occur is shown by the reaction which set in during the third decade of the century. F. Hoffmann, of Halle (1660-1742), declared that riding was absolutely dangerous in cases either of extensive disease or in which the presence of cavities was feared, and that it not infrequently caused hæmoptysis. He therefore prescribed it only in "hypochondriacal consumption."¹ E. Strother (d. 1737), of London, expressed a very similar opinion.² Sir R. Blackmore (d. 1729), of London, found riding serviceable under certain conditions, but denied the virtues attributed to it by Sydenham.³ S. T. Quelmalz, of Leipsic (1696-1758), found that it failed in bad cases, but ameliorated some symptoms.⁴

As has been mentioned already, its beneficial effects were ascribed to the exercise as such rather than to fresh air, and this opinion led to the suggestion that similar results could be achieved by means of machinery. P. Desault, of Bordeaux (1675-1737), admitted that the country air had "its share," but attached relatively so little importance to it that he proposed rocking patients at home in a bed or armchair which was suspended by springs.⁵ He does not seem to have used a machine of this kind himself, but a rocking-horse, swung from the ceiling by ropes, was actually constructed and employed by S. T. Quelmalz, who claimed that his apparatus possessed manifold advantages over a real horse.⁶

Another attempt in a similar direction was made by J. C. Smythe (1741-1821), physician to the Middlesex Hospital. He erected a swing in the grounds, and treated fourteen patients with it in 1786 or 1787. Twelve were cured, one was improved, and one died. The following is his account of a successful case: "Elizabeth Berger, forty-five years of age, was admitted on the 20th of September with febrile symptoms; she had also a cough, shortness of breath, spitting of purulent matter, night-sweats, etc. Pulse 128. She had caustics applied on her breast, took some medicines, and on the 23rd went into the swing: after swinging gently for half an hour, during which time she was free from cough, her pulse fell eight pulsations in the minute. She continued to swing twice a day when the weather was favourable, and always with the same good effect. The fever and night-sweats left her, the coughing and spitting became less considerable, and on the 11th of October

¹ "Opera Omnia." Geneva, 1740, etc., vol. iii., p. 294.

² "An Essay on Sickness and Health." London, 1725, pp. 255, 275, etc.

³ "A Treatise of Consumptions and other Distempers belonging to the Breast and Lungs." London, 1724, p. 134 *et seq.*

⁴ "Novum sanitatis præsidium," etc. Leipsic, 1735, § 27.

⁵ "Dissertation sur les maladies veneriennes," etc., including "Dissertation sur la phthisie." Bordeaux, 1733, pp. 331-412.

⁶ *Op. cit.*, 1735.

she was dismissed from the hospital, with a pulse between 70 and 80, and free from complaint."¹

Smythe's results led him to infer that sea voyages benefited cases of phthisis solely by means of the motion of the ship, since sea air itself possessed "noxious effects." He stated that swinging should be undertaken preferably in the open air, but that a patient could swing in his own bedroom if he liked.² Other observers, however, failed to confirm his results, and his method was speedily forgotten. R. T. H. Laennec (1781-1826) regarded it as useless.³

Very few practitioners of the latter half of the seventeenth century regarded horse-riding as a specific for phthisis—the present writer has succeeded in tracing only one, T. Marryat, of Bristol (1730-1792). "Let the patient," he said, "ride on horseback every morning; if too weak to sit alone, he must be supported by one that rides behind him, for riding in a morning is absolutely necessary."⁴ But the vast majority of physicians prescribed riding in a very restricted manner, if at all. C. J. Tissot, of Paris (1750-1826), stated that it was of benefit only if it lessened cough, made the patient feel stronger, relieved any feeling of oppression in the chest, and reduced the pulse-rate.⁵ T. Beddoes, of Clifton (1760-1808), saw two cases which appeared to justify Sydenham's contention, but considered that the quality and quantity of exercise should be regulated in accordance with the patient's general condition and with the effect produced upon the pyrexia.⁶ T. Dickson, of London (1726-1784), stated that riding should be undertaken only in the morning, being usually injurious at other times.⁷ P. Camper, of Amsterdam (1722-1789), considered it suitable only in early cases.⁸ S. F. Simmons, of London (1750-1813), saw more than one case in which riding accelerated death, and thought that Sydenham's advice had done much harm from too general adoption.⁹ T. Reid, of Bath (1739-1802), stated that riding unassisted by other remedies never cured phthisis,

¹ "An Account of the Effects of Swinging employed as a Remedy in the Pulmonary Consumption and Hectic Fever." London, 1787. Case XII., pp. 44, 45.

² *Op. cit.*, pp. 4-7, 51, 52.

³ "Traité de l'auscultation médiate et des maladies des poumons et du cœur." Second edition, vol. i. Paris, 1826, p. 715.

⁴ "Therapeutics." Twenty-fourth edition. London, 1816, p. 39. (First edition in Latin, 1758.)

⁵ "Medicinisk och chirurgisk gymnastik." Stockholm, 1797, pp. 200-205. (Swedish translation of the French original, "La gymnastique médicinale et chirurgicale," etc. Paris, 1780.)

⁶ "Essay on the Causes, Early Signs, and Prevention of Pulmonary Consumption." Second edition. London, 1799, pp. 276, 277.

⁷ "Observations on the Cure of an Hæmoptoe," etc., "Medical Observations and Inquiries." Vol. iv. London, 1771, pp. 206-213.

⁸ "Dissertationes decem quibus ab illustribus Europæ præcipue Galliæ, Academicis Palma adjudicata." Two vols. Lingen, 1798-1800, vol. i., p. 388.

⁹ "Practical Observations on the Treatment of Consumptions." London, 1780, pp. 53-60.

and that its indiscriminate use very frequently aggravated the disease.¹ J. Von Quarin, of Vienna (1733-1814), disapproved of it entirely.²

At the beginning of the last century riding sank into final oblivion as the principal indication in the treatment of pulmonary tuberculosis. It affords a striking and instructive example of a remedy which at first appeared to succeed brilliantly, then failed to fulfil the expectations that it had aroused, and ultimately took its proper place in therapeutics as a serviceable auxiliary to other measures. The history of medicine abounds with examples of this strange phenomenon, for which no really satisfactory explanation appears to be forthcoming.

¹ "An Essay on the Nature and Cure of the Phthisis Pulmonalis." London, 1782, pp. 121-126.

² "Animadversiones practicae in diversos morbos." Padua, 1792, p. 68.