ON THE SHOULDER-TIP PAIN, AND OTHER SYMPATHETIC PAINS, IN DISEASES OF THE LIVER.*

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II.

THE occurrence of this pain in the top of the shoulder, scapula, clavicle, arm, or side of the neck—in one or more of these parts, and in connection with inflammation, abscess near both the convex and the concave surfaces, cancer, and hydatids of the liver, and with the passage of gall-stones, has been well ascertained, both in ancient and modern times; and, although not always present, it is sufficiently often so, and then frequently so severe, as to arrest the attention of patient and of physician.

It is, therefore, of sufficient importance to demand a serious investigation, and a proper explanation, if such can be found; the more so, as there appears to be a prevalent feeling that its occurrence has not as yet received a satisfactory elucidation. The explanations of this pain that I have seen are these.

1. Aretæus, in treating of acute and of chronic affections about the liver, says that in abscess a sharp pain is felt in the tops of the shoulders and clavicle, "for the diaphragm, from which the liver is suspended, is dragged down by the weight, and the diaphragm drags the membrane lining the ribs, to which it is attached, and this membrane (the pleura) is stretched up to the clavicle and top of the shoulders, which are also dragged down." (*Extant Works of Aretæus*, by Adams, 1856. Chron. Dis., book i, chap. xiii.)

2. Avicenna, Rhazes, and Haly Abbas, repeat the same account. (*The Seven Books of P. Ægineta*, by Adams, vol. i, pp. 567-8. Syd. Soc.)

3. John Hunter states that some sympathies are beneficial and of great value in the economy; that others, again, are injurious, and goes on to say—"Some sympathies are opposite in their action; pain in the liver is depressing, that in the shoulder rousing. Nature is incapable of sustaining the former, and sets up the rousing pain in the shoulder to continue life." (*Hunter's Life*, by Palmer, vol. i, p. 331.)

4. Mr. Hilton, in his Hunterian Oration, 1867, p. 28, after showing that Hunter knew the fact of the existence of the pain, but failed to explain it, proceeds thus—"He had not arrived at the anatomical and physiological elucidation which we have deduced from the fact that the right phrenic nerve, arising from the third and fourth cervical, gives off a branch which takes its course under the inferior cava, through the fissura venosa, into the porta of the liver, and, finally, also one or two filaments to the round ligament."

5. Sir Thomas Watson writes as follows: "Thus, filaments of the phrenic nerve penetrate the diaphragm, and communicate with the ganglia that lie around the coeliac artery; other filaments are distributed to the muscles about the shoulder, and in this way has been explained the well-known fact that disease or irritation of the liver is very apt to be accompanied with pain in the shoulder." (*Lectures on the Practice of Physic*, 4th Edition, 1857; vol. i, Lect. xxxix, p. 720.)

6. Professor Rolleston, in his Address on Physiology at the Oxford Meeting of the British Medical Association, 1868, alluded indirectly to the subclavius nerve and its connection with the phrenic, and so with the shoulder-tip pain in liver-disease.

These connections of the nerve of the subclavius muscle—a twig from the fifth, or fifth and sixth, cervical—with the phrenic, and of the phrenic nerve with the liver through the great sympathetic ganglia, are, I believe, undoubted facts. I do not find the direct passage of phrenic twigs to the porta of the liver and round ligament given in any book (see Ellis and Swan);† but, if present, they are maintained by very small twigs, which are not accessible to examination, and it would be extremely difficult, if not impossible, to prove that the shoulder-pains in liver-disease are located in the phrenic nerve and its branches. This nerve does not appear to give off any other branches in the neck, except those to the sympathetic and to the subclavian muscle.‡ It is true that there are at times pains in or close to the clavicle in some cases of hepatic

disease, and possibly they may be accounted for by the connections pointed out or alluded to by Sir Thomas Watson, Mr. Hilton, and Professor Rolleston; but the ordinary seat of the shoulder-tip pain is not in the clavicle, but in the edge of the trapezius muscle behind it, as will presently be pointed out, and the above-mentioned explanation does not, therefore, answer for that pain.

Now, there exists an important, though a somewhat distant line of nervous connection between the liver and the top of the shoulder—one that has not hitherto been noticed in print—but by means of which a more intelligible and satisfactory explanation is capable of being given of the occurrence of the shoulder-tip pain in liver-diseases; and, by submitting the following observations, noted before special reference was made to what had been previously written on the subject, I shall best be able to show the line of connection just referred to.

These observations were made on cases of hepatic congestion with enlargement, of cancer of the liver, and of passing gall-stones, cases which had, from time to time, come under my notice in public and in private practice; and with regard to the frequency of the pain at the shoulder-tip, I had come to a conclusion the reverse of that stated by Andral, Budd, and others. It appears to me to occur more frequently than is generally believed. That it is seldom severe, I agree; but that it is often present in some degree, though little complained of by patients, and will be discovered on investigation to exist, I feel sure.

The pain, when present and well marked, occurs at the top of the shoulder, being referred especially to the angular space between the acromial end of the spine of the scapula, and the adjacent end of the clavicle, where the upper and outer part of the trapezius muscle, as it goes to be inserted into the bones just named, is lodged. At this part, the external branch of the spinal accessory nerve, after having supplied the sterno-cleido-mastoid, and anastomosed with the second and third cervical nerves, enters the trapezius, forming a small plexus with twigs of the third and fourth cervical nerves, and is continued on along the vertebral border of the scapula, supplying the trapezius in its course, and communicating with twigs of the intercostal nerves.

The pain occurs often when there is much pain in the liver. It varies in intensity from a feeling of weight, or dull aching, to a sharp, lancinating, darting, or boring pain; and then the part at which it is felt becomes more or less tender on pressure (but no swelling or redness, as Dr. Budd has stated, is observable).

It appears to be severe in proportion to the degree of pathological (hyperæmic or inflammatory) disturbance raging in the liver, and is at times accompanied with pains passing from the liver up into the interior of the chest, and the liver itself is very tender on pressure. When not severe, it appears confined to the shoulder-tip; when severe, it shoots downwards to the lower angle of the scapula, and occasionally obliquely upwards along the side of the neck, as far as the base of the skull, in front of the vertebral column, or, in other words, along the track of the external division of the spinal accessory nerve, the only nerve lying in that direction.

In a case favourable for observation, a little examination will show that this nerve is really tender to pressure from the seat of pain at the shoulder-tip up to that part of the sterno-cleido-mastoid muscle through which the nerve is known to pass, and also thence as far towards the base of the skull as it is accessible to pressure. This muscle is tender where the nerve passes through, if its deeper layers are moderately pinched up; but above and a little way below the line of transit of the nerve the muscle is not at all tender to pressure.

The trunk of the pneumogastric nerve also, of the same side, will be found in such a case abnormally sensitive to pressure, and it will be so in proportion to the amount of pain in the shoulder, and to the tenderness of the spinal accessory; and the sensitiveness will be found greater as we trace the nerve down to the clavicle, at a little below the level of which the nerve ceases to be amenable to examination; upwards in the neck, this sensitiveness appears to be continuous with that of the spinal accessory.*

* As it has been matter of dispute whether or not the par vagum is sensitive to irritation or violence, the opposite views on this question are here appended. Dr. Carpenter, in his *Human Physiology*, 4th Edit., p. 519, has the following passage—"Now if this nerve excites the motions of respiration, by its powerful action in producing sensation, we should expect to find its trunk endowed with considerable sensibility, which is not the case; for all experimenters agree in stating that, when its trunk is pinched or pricked, the animal does not exhibit signs of pain nearly so acute as when the trunks of the ordinary spinal nerves, or of the fifth pair, are subjected to similar treatment."

On the other side, Dr. John Reid, in his *Physiological, Pathological, and Anatomical Researches*, p. 163, states that "Haller, Brunn, Dumas, Dupuy, Mollinelli, Mayo, Magendie, Brachet, and himself, all concur in stating that the pinching, cutting, and even stretching of the nervus vagus in the neck, are, in the majority of instances, attended by indications of severe suffering."

Again, in the 7th Edition of Dr. Carpenter's *Principles of Human Physiology*, edited by Mr. H. Power (1869), the following remark is made at page 568. "That the nerve is capable of conveying those impressions which become sensations when

* Read in the Medical Section at the Annual Meeting of the British Medical Association in Newcastle-upon-Tyne, August 1870.

† "One or two filaments of the right nerve join in a small ganglion, with branches to the diaphragm, which are derived from the solar plexus of the sympathetic; and from the ganglion twigs are given to the suprarenal capsule, the hepatic plexus, and lower vena cava." (Quain's *Anatomy*, 7th Edition, vol. ii, p. 641.)

‡ A subclavian twig is not mentioned in Quain's *Anatomy*, 7th Edition, 1866.

Pressure applied upon one or both of these nerves will now and then give rise to an increase of pain in the shoulder, or to pain in the head, and upon the vagus will excite or increase pain in the liver.

The above observations have been often repeated in the presence of clinical students and others at the Newcastle Infirmary, and are full of interest, as they seem to afford the real or chief clue to the difficulty of accounting for the shoulder-tip pain in question. Before, however, concluding that this clue has really been found, it is necessary to trace the courses and connections of the spinal accessory and of the par vagum, their connections with each other, and their relations to the shoulder and the liver.

On referring, therefore, to the best and most recent anatomical works, in English, French, and German, that I have been able to consult, I find that all pretty well agree as to the connections of the par vagum and spinal accessory—that these are more intimately connected with each other than either of them is with the glosso-pharyngeal, and that they have in the foramen lacerum posterius a common vascular network, from which the glosso-pharyngeal is excluded.*

The course, distribution, and office of the external division of the spinal accessory appear not to be in doubt. That the internal division joins the trunk of the par vagum at the ganglion of the trunk, and contributes to the formation of the pharyngeal and laryngeal nerves with the vagus, is not doubtful; but we are ignorant as to how far the remaining part of the spinal accessory, which is incorporated with the vagus, goes along with it, and we do not accurately know to which organs it is finally distributed. These two points are of necessity, from the nature of the parts, of most difficult, if not of impossible, determination by the scalpel.

By some anatomists, the spinal accessory portion of the vagus is believed to be given to the lungs, heart, and stomach, which it is said to animate, more or less, with motor power. (Hirschfeld and Leveillé, *Neurologie et Aesthésiologie*, 2me Edition, Paris, 1866, p. 213 *et seq.*) If this be true, there seems no reason why the liver, kidneys, and other parts—such as the suprarenal bodies, the pancreas, and the small intestine—should not receive branches from the spinal accessory as well as from the vagus itself. In such case, we should have the seat of the sympathetic pain supplied by the external division, and the seat of disease in the liver supplied, in part at least, by the internal division of the same nerve—the spinal accessory—but the two branches being in intimate connection beneath the skull. But, although it is probable that the internal branch of the spinal accessory is distributed to the same organs as the vagus itself, there are not as yet sufficient anatomical grounds for such a conclusion.

It nevertheless appears that the par vagum, accompanied or not by the spinal accessory, does reach the liver, either directly from the gastric branches themselves, or indirectly from them through the great sympathetic ganglia, but the accounts of anatomists as to the mode and the amount of nervous supply to the liver, vary greatly from each other.†

The following extracts will show this discrepancy. No doubt many varieties of distribution exist which will, to some extent, account for the varying descriptions that we find in anatomical books; and the dissection of the part is beset with difficulties, particularly as many of the twigs of the pneumogastric pass through ganglia, and join with nerves of the sympathetic system, and are not easily distinguished from sympathetic twigs; but repeated and faithful researches will give us a more uniform, more correct, and more reliable account, both of the course and ultimate distribution of these important nerves.

These extracts are from Quain and Sharpey, Dr. John Reid, Cruveilhier, Swan, Hirschfeld and Leveillé, Dr. J. Kollmann, and others.

1. Quain and Sharpey (*Anatomy*, 7th Edition, vol. ii, p. 623) say, that from the left nerve "some filaments are continued between the layers of the small omentum to the hepatic plexus"; a part of the right nerve "is continued from the stomach to the left side of the coeliac plexus, etc.," but no mention is here made of hepatic branches. But, again, at page 867, we find that "the nerves of the liver are derived partly from the coeliac plexus, and partly from the pneumogastric nerves, especially the left."

communicated to the sensorium, is experimentally proved by the fact that, when its trunk is pinched, the animal gives signs of acute pain; but it is also evident from the painful consciousness we occasionally have of an abnormal condition of the organs which it supplies."

In the ordinary and healthy state of the body, the vagus in the neck, as any one may satisfy himself, is usually not at all tender. Under ordinary degrees of pressure by the finger or thumb, no pain is produced. In animals, when the nerve is pricked, cut, or ligatured, great pain, as I know from experiment, is the immediate consequence.

* See Quain's *Anatomy*, 7th Edition, vol. ii, p. 618, and plate, p. 619; also, Flower's *Plates of the Nerves*.

† "Some small twigs from the accessory join the pulmonary and cardiac plexuses; the remainder accompany the vagus to the stomach, when they are lost." (*Cyclop. nat. and Physiol.*, vol. iii, p. 690.—John Reid on *Par Vagum*.)

2. Dr. John Reid (*Cyclopædia of Anatomy and Physiology*, 1847, vol. iii, p. 889) tells us that from the concavity of the curve formed by the *left vagus* as it passes from the cardia towards the right side, several small branches run upwards and to the right between the layers of the small omentum to join the left hepatic plexus; and then "The few branches of the *left vagus* which reach the pyloric orifice are partly distributed upon the walls of that portion of the organ, and partly throw themselves into the coeliac plexus. Some of the filaments of the latter portion may be traced into the numerous plexuses surrounding the gastroduodenalis branch of the hepatic artery, into the right hepatic plexus, and may sometimes be followed as far as the artery of the gall-bladder." The *right vagus*, after giving its branches to the cardia and posterior surface of the stomach, sends "a considerable portion, so large as generally to present the appearance of being the continuation of the trunk of the nerve, from the posterior surface of the cardiac region of the stomach, backwards and downwards to the left side of the coeliac axis, sending branches to the splenic, the coronary, and to the superior mesenteric plexuses, to the plexuses surrounding the pancreatic branches of the splenic artery, and it ultimately terminates in the left semilunar ganglion."

3. Cruveilhier (*Anatomy*, Library of Practical Medicine, vol. viii, pp. 1137 and 1162) lays it down that one set of branches of the *left vagus* "enters the gastro-hepatic omentum, and is conducted by it to the transverse fissure of the liver, and enters that gland." The *right* "gives a smaller number of branches to the stomach than the left, and joins the solar plexus, of which it may be regarded as one of the principal origins"; and, again, under heading—Sympathetic Nerve, Coeliac Plexus, "the anterior hepatic plexus accompanies the hepatic artery, and is formed by some twigs from the right pneumogastric, and by several large branches from both semilunar ganglia."

4. In Swan's *Demonstration of the Nerves of the Human Body*, p. 51, London, 1834, we read of the par vagum:—"Right side. After it has passed the diaphragm, it gives filaments to the cardiac extremity of the oesophagus, some of which communicate with similar ones from the left side. It sends a branch to terminate on the posterior surface of the stomach, after giving a branch to the splenic plexus. It sends a branch to terminate on the lesser curvature of the stomach. It gives a branch to communicate with branches of the left trunk on the superior gastric artery, and others from the part of the right hepatic plexus on the pyloric artery to terminate on the stomach. It sends a branch to communicate with those from the coeliac plexus, accompanying the superior gastric artery. The continuation or principal part of the trunk then passes downwards, and ends in the coeliac plexus. The left, having passed the diaphragm, sends several filaments to the cardiac end of the oesophagus, and to communicate with those from the left side. It sends several branches to join the left hepatic plexus, and a considerable branch to the broad end of the stomach. It sends several branches on to the lesser curvature, some of which terminate at once on the stomach, and others pass along the superior gastric artery to meet the branch accompanying the pyloric artery from the right hepatic plexus, as well as filaments from the branch of the right or posterior trunk."

5. From Hirschfeld and Leveillé (*Neurologie, ou Description et Iconographie du Système Nerveux*. Paris, 1853) I gather the following passages:—"Le cordon gauche donne des branches dont les unes vont à la grosse tubérosité de l'estomac, dont les autres longent la petite courbure entre les deux feuillets de l'épiploon, et se perdent à la face antérieure de l'estomac; les dernières remontent entre les mêmes feuillets, dans le sillon transverse du foie, accompagnent les vaisseaux hépatiques, s'anastomosent avec le plexus hépatique du grand sympathique, et se distribuent au foie." "Le droit se divise derrière le cardia en deux faisceaux; l'un plus petit, se perd à la face postérieure de l'estomac où il s'anastomose avec le gauche par l'intermédiaire des ganglions plats; l'autre se dirige vers l'extrémité interne du ganglion semilunaire droit, et s'anastomose avec le plexus solaire. J'ai pu poursuivre quelques filets jusqu'au plexus nerveux mésentérique supérieur."

Valentin, and other German and French Anatomists, describe very minutely the supply of the par vagum to the liver, but do not agree with each other.

7. Dr. Sharpey has kindly given me a copy of a Prize Essay, entitled *Ueber den Verlauf des Lungenmagennerven in der Bauchhöhle*, by Dr. J. Kollmann, Assistent an der Königl. Academie in München, Leipzig, 1860, with two lithographic plates of the distribution of the par vagum. In the summary at the end of the Essay we find the following:—"Der vordere Lungenmagennerv endigt an dem Magen und der Leber," and "Der hintere Lungenmagennerv biegt sich nur mit dem kleinern Theile seiner Fasern zum Magen, mit dem bei weitem grössern verzweigt sich an der Leber, der Milz, der Niere und Nebenniere, der Bauchspeicheldrüse und dem ganzen Dünndarme." In this Essay there

is also given an excellent *resumé* of the researches of previous German and French Anatomists into the distribution of the par vagum in the abdomen.

The account of the liver-nerves by Kollmann appears to be more in accordance with what might be expected from analogy, and from pathological observation and inference, than the descriptions of the other authors. But the vagueness and unsatisfactory state of our knowledge on the above subject must now be evident.

Besides, although some anatomists mention anterior and posterior hepatic plexuses, yet only few, as John Reid, Swan, and Valentin, appear to have distinguished plexuses or nerves of the right from plexuses or nerves of the left lobe, and we know little as to the ultimate destination of the nerves in the interior of the liver.

As to this ultimate distribution, the substance of the knowledge we appear to possess is as follows. The combined sympathetic and pneumogastric branches "enter the liver supported by the hepatic artery and its branches, along which they may be traced a considerable way in the portal canals, but their ultimate distribution is not known." "The gall-bladder receives nerves along the hepatic artery from the coeliac plexus." (Quain's *Anatomy*, 7th Edition, 1867, vol. ii, pp. 867 and 868.)

Ellis (*Demonstrations of Anatomy*, 3rd Edition, 1852) says, "the hepatic plexus is continued on the vena portæ, hepatic artery, and bile-duct, to the transverse fissure, where it enters the liver and ramifies on the vessels."

Cruveilhier says that the hepatic plexus of the sympathetic (which comprises the pneumogastric hepatic nerves) "gains the transverse fissure of the liver, divides like the vena portæ and hepatic artery, and may be traced for some distance in the capsule of Glisson." (*Anatomy*, vol. ii, p. 1162; Tweedie's Library of Medicine, 1842.)

THE WAR AND WINTER-STATIONS FOR INVALIDS.

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THE selection of wintering-places for invalids, always a subject of some difficulty, is this year complicated by the war now raging in France, and by the uncertainty as to the extent of French territory which may become the seat of hostilities. At present, the Mediterranean health-resorts of France—Hyères, Cannes, Nice, and Mentone, are cut off from direct communication *viâ* Paris and Lyons, and can be only reached by circuitous routes through France, likely to be soon obstructed, or by still more circuitous routes through Germany, Switzerland, and Italy. On account of uncertain communication, Pau, Arcachon, and Amelie les Bains will also probably be closed to visitors. Let us, therefore, briefly consider what winter-stations are still accessible to invalids.

In the first place, there are those of our own south coast, which offer the attractions of home comforts, first-rate medical advice, and easy accessibility, and will no doubt be largely resorted to. Their mild climate may be generally ascribed to their shelter from northern and easterly winds, and to the benign influence of the Gulf Stream and of the currents, aerial and aqueous, generated by it. A mild atmosphere, of tolerably equable temperature, devoid of extremes either of cold and certainly of heat, is thus obtained; but we must not forget that it has the drawbacks of more or less humidity, much cloudy weather, and a considerable number of rainy or foggy days.

Of these stations, Torquay stands pre-eminent, on account of its admirable shelter from cold winds, and the large choice of residences which it offers; for so extensive is the sheltered area, and so various the elevations included in it, that a situation may be chosen either near the sea, at some distance from it, or even at heights of several hundred feet above it. On account of its rocky soil, Torquay is perhaps less damp than many parts of Devonshire; but its large number of trees, both deciduous and evergreen, do not add to its dryness, and cause an amount of shade more acceptable in summer than in winter.

The Cove of Cork, Penzance, Falmouth, Dawlish, Teignmouth, and Tenby, enjoy much the same mild, moist ocean-climate as Torquay; only they are less sheltered from winds which, from their coldness or tempestuous violence, are trying to invalids.

Nearer London are Ventnor and Bonchurch, capitably protected from the north by high cliffs several miles in length, but very circumscribed in area; while for those for whom a more open and only moderately sheltered situation is advisable, Bournemouth, with its dry sandy soil

and fragrant pine-woods, may be indicated, as strongly contrasting with those damp localities in which, according to modern research, phthisis is endemic.

Hastings and Worthing, the mildest places of the south-east coast, if inferior in temperature to the best stations on the south-west coast, have attractions in point of proximity and accommodation; but they are open to east winds, the common prevalence of which in the later winter and early spring months greatly impairs the suitability of these resorts at that season. The same objection applies still more strongly to Brighton, the most bracing place on the south coast, which up to Christmas is generally warmer and more sunny than most inland places, but in the spring it becomes too bleak to be endurable by pulmonary invalids.

It is, however, obvious that there are invalids who require a warmer and drier climate than can be found in these islands, and to many of them it is a necessity of life: for these we must look abroad.

The Italian Riviera, extending from Ventimiglia to Spezzia, promises for this winter a safer asylum than the places in the South of France; while its health-resorts enjoy a similar and in no way inferior climate. I have long urged the desirability of establishing more health-stations on this part of the coast, where highly favoured sites, such as Diano, Alasio, and others, are not wanting; and in this way the overcrowding of the favourite French resorts might be much relieved. I hope to see the day when this may be accomplished; but, for the present, San Remo, Bordighera, and Nervi are alone fit for the reception of invalids; and, of these, San Remo can be warmly recommended, on account of its extensive hotel-accommodation and the size of its sheltered area. The protecting range, sloping gently back from the shore, is intersected, but not penetrated, by numerous valleys, remarkable for the luxuriance of their vegetation; and the chain, running out on each side to the sea, encloses an amphitheatre four or five miles in width, which it shelters from all cold winds. Here can be found a considerable choice of villa residences; while the olive-clad hills and valleys, abounding in lemon-trees and wild flowers, afford full scope for varied excursions. The climate is one of the finest on the coast, the number of rainy days being very small, and the mean daily range less than in the other health-resorts.

Bordighera, well known to English novel-readers as the scene of *Dr. Antonio*, is a few miles nearer to the French territory, and much resembles San Remo in position and climate, though it is inferior in shelter and in accommodation. The palm-groves, from which each year Rome is supplied during the Holy Week, testify to the warmth of the place; and in the comfortable hotel invalids have wintered safely.

On account of its proximity to Genoa, and its fine view of the beautiful bay, Nervi is sometimes preferred as a wintering-place. It contains a good hotel and boarding-house, and is fairly sheltered; but the rapid rise of the hills behind it limits the extent of the rides and drives. English medical men reside at San Remo and Bordighera; but at Nervi recourse must be had to Genoa for such aid.

How is the Riviera to be reached this winter? The transit by Paris, Lyons, and Marseilles,* so easy and safe for invalids, being obstructed, there is still open to us the road through Germany, *viâ* Ostend, Cologne, Stuttgart, Munich, and thence by the Brenner Pass to Verona and Genoa. The unbroken rail-communication enables the invalid to make this journey easily in about a week; and he can proceed from Genoa by train in two hours to Savona, and thence by carriage in one day to San Remo. This would also be the safest route to pursue for those who preferred trying Mentone, Nice, or Cannes. Those to whom so long a land-journey is likely to prove injurious can go by the steamer which starts every week from Liverpool to Genoa, performing the passage in about ten days.

As regards the Italian cities, Pisa is the only one which can be safely recommended as a winter-station. The climate bears a certain resemblance to that of Pau; but the locality is damper and not so well sheltered, and the drives in the vicinity are exposed to cold blasts from the Apennines. Among the Italians, Pisa is held in high repute.

According to my experience, few places are so unfit for a pulmonary invalid as Rome. If he wanders on the sunny and sheltered slopes of the Pincian, he is tolerably safe; but a drive into the Campagna exposes him to cold winds, and possibly to malaria; a walk in the well-like streets, so narrow and walled-in by lofty palaces that the sun hardly reaches the pavement, is not beneficial; and visits to the icy museums and galleries, to which his inclinations and his friends direct him, are fraught with danger.

In Naples, there is the additional disadvantage of bad drainage; and, although in its neighbourhood there are sheltered retreats, such as

* The British Chaplain at Nice has lately reached that city *viâ* Bâle, Geneva, and Lyons; but, with the prospect of Lyons being soon attacked by Prince Frederick Charles's army, this route can hardly be recommended.