Lastly, the wound was thoroughly cleansed of blood and seen to be dry; then the flap was laid down and accurately closed with wire sutures. A pad of lint and oil silk covering were used, and bandaged round the joint to exclude the air, and prevent any collection of blood beneath the flap. I never have recourse to antiseptic precautions in the operation or in dressing the wound; and in after-dressings, I trust entirely and with confidence to the pre-septicism of cleanliness and general hygienic arrangements. Under this system, I have never yet known pyæmia or septicæmia to follow any joint-excision in now an unusually large number of cases. In the present case, the ordinary amount of swelling followed the operation, but which gradually subsided; and the joint was not uncovered for some days. Then primary union had taken place throughout the whole length of the incision, although generally the angles remain open and ooze for some time. Two or three of the sutures were picked out, the others remaining until the adhesion had become firm—in the course of another week or two. Three sinuses, existing before the operation, afterwards served to drain away a small quantity of adhesive serous fluid.

Two months after operation, on July 4th, the splints were removed for the first time, when the bones were found to have firmly united, and the patient could raise the limb a little from the bed. The splints were reapplied. The man's general health had much improved; and, instead of presenting a withered and prematurely old appearance, his rejuvenescence was a matter of general comment in the hospital.

NOTES OF AN EASTER HOLIDAY TRIP TO MADEIRA.

By T. SPENCER WELLS, F.R.C.S.

SINCE the publication of Sir John Forbes's *Physician's Holiday*, a month's ramble in the autumn has become part of the life of busy men in our profession. At one time, Sir H. Holland was almost a solitary example of a man who regularly every year made some long voyage; and even now, when six weeks in Scotland, or a long continental tour, is by no means uncommon, a month at the seaside or in Switzerland is as much as can be spared for health and recreation, even by the more fortunate of our brethren. Latterly, some who, for various reasons, wish to remain in or near London in the autumn and avoid part of a long winter or a cold spring, have gone to the South of Europe, to Algiers, or to Egypt, in December, January, or February, returning to London when Parliament meets, or soon after. An Easter holiday of more than a few days is only just becoming a thing to look forward to. When Easter is late, a few days may be spent pleasantly in Normandy, or in Belgium and Holland. It is often too cold for Paris, and the weather is not, when Easter is early, very encouraging for a trip by sea. Easter was early this year; but, never having seen Madeira, having been prevented from leaving home in the winter, and last autumn's holiday having been much shortened, I determined to give up three weeks to the voyage to Madeira and back, and to pass about ten or twelve days on the island. Accompanied by two of my daughters, we left Southampton on the afternoon of the 25th of March, and Plymouth on the 26th, in the Union Company's steamer *German*, and arrived at Madeira on the 30th, exactly four days from Plymouth, a distance of 1200 miles. We had what was considered to be rather a rough passage, and several ladies on board suffered a good deal from sea-sickness; but the French Empress Eugénie, who was the most distinguished passenger, appeared at every meal, was on deck a great part of each day, and enjoyed the moonlight nights.

We remained at Madeira until Friday, the 9th of April, and left on the evening of that day in Donald Currie's steamer the *Warwick Castle*, arriving at Plymouth on the afternoon of the 14th, sleeping at Exeter, and, after visiting the cathedral on the morning of the 15th, arriving in London in the afternoon, exactly three weeks from the day of departure.

It may interest many of our Associates to know something of what may be gained by three weeks so spent. In the first place, nine days on the open sea is a great gain. Supposing sea-sickness to be trifling, or altogether out of consideration, there can be no doubt that the rest, quiet, and thorough change of a life at sea is beyond all question far more exhilarating than any change which can be obtained by railway travelling. And a few days' voyage at the end of March, when cutting east winds are prevalent in London, may take us into delightful weather—to Bordeaux, for example, or to Lisbon, or Cadiz, or Gibraltar and the North African coast. None of these would have been new to me; I therefore chose Madeira, though the Azores would also have been new and almost equally within reach. I cannot too strongly advise any one thinking either of a spring or an autumn holiday to go to Madeira. Except in the hottest of the summer months, the climate is most enjoyable.

The hotels in Funchal are excellent, and the excursions near the town numerous and interesting; while longer excursions to the north of the island open up some of the finest mountain and coast scenery in the world. Excellent saddle-horses or ponies are to be had for those who are not strong walkers; and a hammock carried by two men for those who do not ride and for invalids is the easiest and safest mode of conveyance I have ever seen or tried, far more so than the *chaise à porteur* known to tourists in Switzerland.

It may perhaps interest some readers if I give a short account of an excursion of five days which I and my daughters made from Funchal to the north of the island. Starting at 8.15 on the morning of the 1st of April, I and one daughter on horseback, the other daughter in a hammock, we at once began to ascend the mountain at the back of Funchal. The hammock is carried by two men, and a third man goes on all long journeys, so that one man may rest at intervals. A man also goes with each horse, and we took an additional man to carry provisions and a change of clothes. We reached the top of the pass soon after noon, began to descend on the north side of the mountain, rested about an hour, and arrived at Santa Anna about five. Here we found comfortable quarters in the house of a landowner, who acts as an hotel-keeper, remained there that night and the next, spending the 2nd of April in a lovely excursion to what is called the Levada de Fayal—a watercourse carried along the mountain-side up narrow gorges. We should have given another day to the ascent of the Pico Ruivo, the highest point on the island, but the day, though delightful in the lowlands, was not favourable for mountain views. So, on the 3rd, we took the coast-line for San Vicente, starting at eight and arriving at four, by horse and hammock as before, along some of the grandest rock and coast scenery in the world. A small inn at San Vicente afforded clean beds and other accommodation, rough but sufficient. The 4th we spent in a coast ramble on foot to Seixal; the 5th, in returning by a magnificent mountain-ride to Funchal, starting at 7.30 and arriving at 5. The 6th was spent in Funchal, seeing sugar-mills, wine-stores, the Consumption Hospital, and gardens. On the 7th, we made another coasting excursion, this time by boat, to what are called the fossil-beds, returning to Santa Cruz, and then going by hammock to Dr. Grabham's mountain residence at Camacha, where we dined and slept, returning on the 8th to Funchal. On the 9th, we spent the early part of the day seeing a great establishment where pineapples are grown by the thousand for Covent Garden, the working of the submarine telegraph, and other objects of interest, under the kind guidance of Dr. Grabham; and, the return steamer having been signalled just before sunset, we left for Plymouth at night.

Beside this hasty sketch of a delightful holiday, I may allude to some matters of professional interest. Of course, the chief interest of Madeira to us all is its use as a winter residence for invalids. On this point, I need only say that I saw several residents who had gone out apparently in a hopeless condition years ago, but were still enjoying life at Funchal in the winter, and up in the mountains in the summer, invariably suffering if they returned to England even in the summer. I heard of others who had gained so much by two or three winters in the island as to be able to remain afterwards in Europe. But those interested in this matter should read Dr. Grabham's work on *The Climate and Resources of Madeira, as regarding chiefly the Necessities of Consumption and the Welfare of Invalids*. Dr. Grabham has been engaged lately on some novel observations on the effect of light and elevation, the results of which I hope he will be able to bring before the Association at the Cambridge meeting in August.

The Hospital for Consumptive Patients, founded by the Princess Maria Amelia in 1853, is now a large airy building, with small wards of six, four, two, and one bed, surrounded by a lovely garden; and is under the care of Dr. Pitta, who has published a series of valuable annual reports of his experience. In the four years 1875-78, he treated one hundred and ninety-one patients—one hundred and forty-three of whom were cases of phthisis. In forty-four of these, there was evidence of hereditary influence. In the others, it was traced to hard sedentary work, in unhealthy cottages, with insufficient food. A very large proportion of the females is furnished by the young women who work at embroidery sixteen or eighteen hours a day, sitting on the ground in a cramped position, with the thorax bent towards the knees; eating meat only two or three times a year; and having very scanty food, on any but great festival days, of bread or maize, potatoes, or a little salt fish. This is a sufficient answer to those who ask: Why send consumptive patients to Madeira, when phthisis is so prevalent among the native population?

On the day I left, I was asked to see a native lady, between sixty and seventy years of age, who had cataract in both eyes. I was told that all such patients were sent to Lisbon or Paris for operation, and that it was doubtful if the operation of extraction had ever been performed in the island, but that it certainly had not been done during the last thirty

years. The surgeon who brought the lady to me had a very good case of instruments, and as he undertook, with Dr. Grabham, the charge of the patient after operation, I was able (although I had not extracted a cataract for about twenty years) to remove both lenses, and thus save this old lady the voyage to Lisbon; and I have lately heard from Dr. Grabham that the result of the operation has been quite successful.

CASE OF RUPTURE OF THE HEART FROM EXTERNAL VIOLENCE, WITHOUT PENETRATING WOUND.

By HENRY HANDFORD, M.B. Edin., M.R.C.S. Eng.,
Assistant House-Surgeon to the General Hospital, Nottingham.

ON Saturday, November 1st, a man, A. B., aged about 35, was brought to the General Hospital, Nottingham. A wheel of a light cart (empty) had passed over his chest. According to the statements of the men who witnessed the accident, he never spoke or moved after the receipt of the injury, but continued to make a moaning noise for a few minutes. When he was brought to the hospital, about ten minutes later, he was quite dead.

Post Mortem Examination, forty hours after death.—The body was well nourished; height about 5 feet 8 inches; muscular. Rigor mortis was very strongly marked. There was an incised wound about an inch long on the back of the head, and numerous syphilitic sores and scars on the penis, scrotum, and thighs. (He had been an in-patient of the hospital some months previously for syphilis.) *There was no trace of any wound or contusion on the chest, nor were any of the ribs broken.* On examination of the thorax, the pericardium was found much distended; and, on opening it, about eight or ten ounces of serum and imperfectly coagulated blood escaped. While examining the heart *in situ*, a rupture about three-fourths of an inch long was discovered on the posterior wall of the left auricle. The aorta was distinctly atheromatous; and there was thickening of the mitral, and less so of the aortic and tricuspid valves. The endocardium lining the left auricle was markedly thickened in irregular patches, and of an opaque yellowish colour. The muscular fibres of the left auricle, taken from the immediate neighbourhood of the rupture, showed, under the microscope, well-marked pigmentary degeneration; *i.e.*, an accumulation of pigment-granules arranged more or less in rows in the region of the nucleus; but no distinct trace of fatty degeneration, though the fibres were not well striated. The weight of the heart was eleven ounces and three-quarters. The lungs were engorged. The spleen was soft and large, and weighed eight ounces. The other organs were healthy. On examining the brain, a patch of yellow softening was discovered at the apex of the temporo-sphenoidal lobe. The contents showed, under the microscope, numerous oil-globules, compound granular corpuscles, and a quantity of amorphous granular pigment. There was no trace of injury to the brain or membranes corresponding to the scalp-wound in the occipital region.

REMARKS.—Wounds of the heart, arising from any cause, are not common; but, of all injuries, rupture from mechanical violence is the least common, as may be seen from the table given by Herr George Fischer (*Archiv für Klinische Chirurgie*, Band ix, Heft 3) in which, out of 452 cases, there were wounds from pointed instruments, 44; from pointed and cutting instruments, 260; from firearms, 72; *injuries from crushing*, 7; (spontaneous?) rupture, 69.

The cause of the rupture in this case was evidently compression of the chest-wall and of the contents of the thorax by the wheel of the cart; the heart giving way at its weakest part—*viz.*, the left auricle; that part being actually one of the weakest spots, and relatively the weakest, because it is the part of the heart which would be least supported by surrounding structures in the case of compression. The right auricle is more nearly in contact with the chest-wall, and would gain support from it; and, besides, it has an important safety-valve in the openings of the two great veins—the *venæ cavæ*—into it. When the distended auricle felt the effects of the pressure on the chest-wall, the contained blood would be unable to flow onwards into the ventricle, as the cavity of that would be kept closed by the same pressure; but it would have comparatively little difficulty in passing back again into the *vena cava inferior*, and so into the abdomen, which was free from pressure. In the case of the left auricle, it gains little support from the adjacent inner surface and root of the lung; and it has no safety-valve, inasmuch as the blood cannot escape into the ventricle, for the same reason as before; neither can it pass back into the pulmonary veins, because the lungs themselves are equally exposed to the pressure which would tend to drive the blood in the pulmonary veins onward into the auricle, and so further distend it.

I have taken no account of the muscular action of the heart itself, because it would be quite inconsiderable, when compared with the immense external force which must be exerted to cause such a lesion as the above.

The above theories may, perhaps, serve to explain the observed fact that, in ruptures from violence, the left auricle is most frequently affected; whereas in spontaneous rupture the left ventricle is by far the most common seat of injury. Thus, in five cases mentioned by Dr. Payne (Jones and Sieveking's *Pathological Anatomy*, p. 332), in which there was rupture of the heart from mechanical injury without penetrating wound, the left auricle was affected in three cases, the left ventricle in one, and the right ventricle in one. In spontaneous rupture, on the contrary, in one hundred cases tabulated by Dr. Quain (*Lancet*, April 6th, 1872), the left ventricle was ruptured seventy-six times; the right ventricle thirteen times; the right auricle seven times; the *left auricle twice*: the septum four times.

In spontaneous rupture, the coexistence of fatty degeneration of the muscular fibres is almost a *sine quâ non*. In rupture from violence, this is not necessary, and, indeed, it is usually not present; but, undoubtedly, the production of a rupture would be facilitated by it; and in the present case, I think, both from the appearance of the muscular fibres under the microscope and from the general state of the valves and endocardium, as well as from the consideration that the man was saturated with syphilis and had a patch of softening in the brain, that the muscular substance of the heart was far from being in a high state of nutrition and tone, and that the rupture was much facilitated thereby.

Death probably took place from compression of the heart by the blood effused into the pericardial sac; and the extreme rapidity of the death may, perhaps, account for the absence of marks of bruising on the skin of the chest.

A case somewhat similar to the above has been recorded, where a boy sustained a rupture of the septum ventriculorum from a kick from a horse, without apparent injury to the chest-wall.

A CASE OF ACUTE PHTHISIS FROM DIRECT CONTAGION IN A DOG.

By D. H. CULLIMORE, M.K.Q.C.P.

HAVING read with great interest the remarks on Tuberculosis as a Contagious Disease in the *JOURNAL* of May 8th, I send the following case, which contains many points bearing on this subject.

About six years ago, when I was acting as Residency Surgeon at Mandalay, a Bengalee servant, suffering from advanced pulmonary consumption, with copious expectoration, came under my notice. One of my dogs—a pariah—developing his natural talents as a scavenger, was, as I afterwards learned, in the habit of frequently visiting the house of the sick man, and lapping up the expectorated matter. How long this had been going on I cannot with certainty say; but a few days after the death of the man the dog appeared out of sorts, refused his food, rapidly emaciated, had a cough which increased quickly in severity, and was attended later on with a tenacious and glairy discharge from the mouth and nose. The stethoscope detected moist *râles* with rhonchus and sibilus over a greater part of the chest. These symptoms continued to grow worse for a week or ten days, when convulsive fits of about five minutes' duration, and occurring several times in the course of the day, made their appearance. These fits were of an epileptiform or tetanic character. The poor animal moaned a good deal and appeared in great pain, as he lay on his back reeling and kicking about. On the second day from the commencement of the fits, and about the twelfth from the beginning of the disease, there being but little hope of recovery, a large dose of prussic acid was given, which speedily proved fatal.

The *post mortem* inspection was limited to the contents of the skull and the chest, as these were the parts supposed to be more prominently diseased, and in both were found lesions to account for the symptoms during life, and their probable cause. Both pleuræ were adherent, the adhesions being recent; and the lungs were studded with softened patches, in varying stages of caseous degeneration, many of them containing muco-purulent matter, with which the minute and larger bronchi were also clogged. I did not notice the state of the bronchial glands. The brain did not show much signs of disease, and nothing similar to what existed in the lung. The membranes appeared thickened and congested, and on cutting them a good deal of serum exuded; there were no tubercular or cheesy deposits; the whole mass was uniform, and appeared softish, but I had no previous experience of the canine brain, and cannot speak with certainty.